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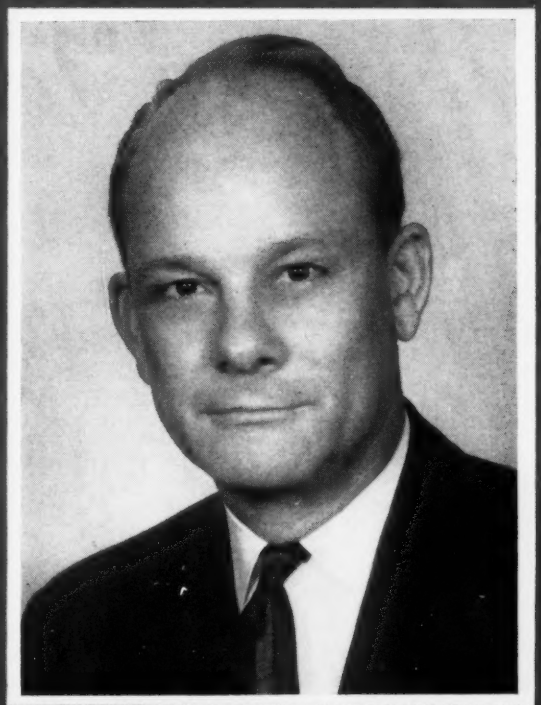

DONAHUE RESIGNS MENTAL HEALTH POST

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Editorials

Voice of the Taxpayer

Oklahoma televiewers will receive medicine's viewpoint on the challenge of an aging population when the one-hour television program "Voice of the Taxpayer" goes on the air October 11, 2:00 p.m., (KOCO-TV, Channel 5).

Under the direction of Mr. Steve Stahl, Executive Vice-President of the Oklahoma Public Expenditures Council and Chairman of the National Taxpayer's Conference, the program will consist of a panel discussion featuring such notables as Louis M. Orr, M.D., President of the American Medical Association and Rita Campbell, American Enterprise, Incorporated.

Tentative plans for the presentation call for a comprehensive introduction to the "problem" as it exists in the minds of some politicians and special interest groups, followed by the panelists' discussion as to how it may exist *in fact*. The controversial Forand Bill will receive its share of attention and viewers will likely be asked to contact their Congressmen.

Mr. Stahl has contributed much of his time to not only combat socialized medicine, but to also rekindle individual and family responsibility in health matters. The October 11 program will be his second television appearance in this regard since January, 1959. Twenty-one additional programs have been presented on state and federal problems of government and taxation.

Physicians are encouraged to promote listenership for the program. Only through the majority's understanding of the multifaceted situation will a sound approach to the challenge of aging be realized.

Child Study Center Children's Memorial Hospital

A CONCEPT OF COMMUNITY SERVICE

The Department of Pediatrics, University of Oklahoma School of Medicine, received a grant of near $50,000 a year for three years from the National Institutes of Mental Health for its Child Study Center. In the application for the grant the following appears:

"An unusually large number of children with specific reading disability have already been evaluated by the Study Center. This surprisingly large group has resulted in plans for the establishment of a Reading Clinic in cooperation with the City and State Departments of Special Education and the Children's Hospital School. The number of children with dyslexia already evaluated in the short period of time since the inception of the study center has over-crowded the limited facilities for therapy. The establishment of a developmental and remedial reading clinic will further enable the study center to achieve one of its aims, to demonstrate the provision of cooperative, comprehensive care of mentally handicapping conditions.

"Training and observation will be available in the Reading Clinic to all school teachers for instruction in case finding, developmental and remedial reading techniques and for supervised practice teaching. With such a program for the regular class room teachers, more of these problems in children will be detected at an early age and appropriate therapy instituted. This will prevent the serious emotional problems that would have otherwise developed."

Through this, hope, on a large scale, may be realized for those many, many children who would have gotten to high school and even to college without being able to read. Only a scattered few have received adequate remedial training and many of these at an advanced age that precluded really effective training. The ultimate effect of such a program on the future citizens of Oklahoma can only be realized through awareness of the frustration that comes from not understanding the printed word. A simple sentence with subject, verb and object appears to the nine-year old-boy as an essay on prob-

abilities or partial pressures or transistors does to most of us.

This program is a striking example of the public and community service of which the school of medicine is capable and which will make it indispensable to the people of the state. It is indeed growing up and becoming a great producer institution—no longer just a consumer. No better plan for gaining support from the people could be conceived. *The Journal,* the parents of children who can't read, the teachers who can't teach children to read who can't read, and the high schools and colleges who can do little for children who can't read, all wish Doctors Riley and Richardson Godspeed, for children with dyslexia are getting older each day.

Development and Purpose of the Registry of Blood Dyscrasias

An increasing number of drugs and other potentially toxic compounds found in industries, in the home, and in our daily contact are being introduced every year. Untoward reactions to some of these substances may be so rare as to avoid detection, even after careful field test prior to release to the public. Although these reactions may be rare, they can be very serious on occasion. This is particularly true of the drug-induced blood dyscrasias. It is impossible to differentiate clinically between a case of drug-induced marrow depression and one which apparently occurs spontaneously.

An investigator working independently might have difficulty assessing accurately the occasional hematological ill-effect he may see from the use of a drug. However, the collective experience of a number of observers may be helpful. For this reason, the Registry on Blood Dyscrasias of the Committee on Research of the American Medical Association was established to assemble reports of blood dyscrasias in which drugs and toxic agents conceivably played a role. The registry is intended as a means of alerting the medical profession to such possibilities. It is not meant to be a repository for authoritative or statistical information.

The Subcommittee on Blood Dyscrasias conducted a two-year pilot study and has reviewed the accumulated data. It has concluded that this information could serve as an early warning system for the medical profession. The summaries, which are prepared semiannually, will be distributed widely, in the hope that physicians will become aware of the existence of the registry and will report cases. The current summary has been distributed to the following groups: state and county medical societies, hospitals, medical school libraries, and departments of pharmacology, pathology, medicine, and pediatrics of all medical schools. Physicians may examine this information at these sources, or they may write to the Committee on Research, American Medical Association, for copies. In the summary for the second half of 1958, 427 cases have been reported to the registry by physicians in the United States and Canada since 1953, and some cases have been taken from the literature. Reports are accepted by the registry only when the drug or toxic agent was administered to the patient within six months prior to the appearence of the dyscrasia. It is evident that inclusion of a drug in the list does not necessarily mean that it is harmful or that it was the cause of the reported dyscrasia. The information contained in the summary is not to be considered authoritative or statistically significant, since these data are "raw" and undoubtedly represent only a small segment of the total number of cases which probably occur.

When a patient develops a blood dyscrasia after use of a single drug, there is stronger circumstantial evidence of an etiological relationship than in instances in which many drugs were administered. If it is well known that one of the drugs administered may cause the dryscrasia, suspicion should not rest as heavily on the other drugs, especially if they are not known to cause a dyscrasia.

The continued effective operation of the registry depends on the cooperation of physicians who have seen patients with blood dyscrasias which they suspect might have been induced by a drug or toxic agent. The form used in reporting cases to the registry may be obtained by writing to the Secretary, Committee on Research, American Medical Association, 535 N. Dearborn St., Chicago 10.

Scientific Articles

The Treatment of Primary Dysmenorrhea with Chlormezanone (Trancopal©)

AUSTIN R. STOUGH, M.D.

Since graduating from the University of Tennessee College of Medicine in 1936, Austin R. Stough, M.D., practiced in Oklahoma City and Tecumseh before locating in McAlester. He is engaged in general practice, with a special interest in Urology.

Doctor Stough is a member of the South Central Section of the American Urological Association and the American Society of Clinical Hypnosis.

RECOGNITION of the frequency and severity of primary dysmenorrhea has encouraged therapeutic measures which have closely followed the currently fashionable theories about the etiology of menstrual symptoms. Hormonal, antispasmodic, analgesic and psychiatric treatment are used with varying success. Endocrine therapy is regarded by many as dangerous, especially in the teen age girl whose hormonal pattern may easily be permanently disrupted.[1] Analgesics are often inadequate unless very potent and the hazards of narcotics for relieving a regularly occurring pain are well-known. An increasing emphasis on the importance of emotional factors in causing dysmenorrhea[2, 3, 4] has influenced many physicians to adapt programs directed towards the relief of tension and anxiety at the time of menstruation. While there is evidence that psychotherapy is valuable, the practical limitations of treating a disorder occurring in an estimated thirty-five to forty-seven per cent of women are obvious.[5, 6] The advent of tranquilizing drugs offers hope that the relief of psychic stress may combat the physical pain and several recent publications support this viewpoint.[7, 8]

Chlormezanone (Trancopal*) is a recently synthesized drug belonging to the metathiazanone group of compounds. It is a central relaxant which is thought to depress the subcortical centers of the brain stem as well as the polysynaptic spinal pathways and in this way provide relief from muscle spasm as well as induce a general tranquilizing effect.[9] The low toxicity and excellent tolerance of chlormezanone in both animal and clinical studies[10, 11] and the unusual combination of muscle relaxing and tranquilizing actions afford a rationale for using this

*Material for this study was supplied by the Medical Research Department of Winthrop Laboratories, New York, N.Y.

drug to treat menstrual symptoms. Practical experience has shown this assumption to be correct. Lichtman[11] reports that fifty-six of sixty-five women with dysmenorrhea found much relief with Trancopal. Of fifty patients with particularly severe pain treated by Shanaphy,[12] all except nine responded well.

Materials and Method

A series of 75 women, each having a history of menstrual pain of varying sorts and intensity, with no evidence of organic pathology, was studied before and during treatment with Trancopal in an attempt to evaluate the effectiveness of this preparation against the symptoms of dysmenorrhea. The following information was obtained from each patient: the type, intensity and duration of symptoms; interference of symptoms with normal activity; the nature and effect of previous medication; the amount of relief afforded by Trancopal (complete, moderate, slight, none) and a comparison of the effectiveness of Trancopal with other therapy. The number of 100 mg. tablets of Trancopal needed during each menstrual period was carefully recorded. These women were all institutionalized so that the amounts and kind of medication were never in doubt. All patients were observed through one to four menstrual periods and remained untreated when asymptomatic. Although subjective reports of relief were the main criteria, objective assessments of behavior, mood and performance were available.

An attempt is made to compare the character of dysmenorrhea and response to therapy in the girls under 20 years of age, who comprise three-quarters of the series, with these findings in the older age group. In the total series, 52 were teenagers ranging in age from 13 to 18 years (average age, 15.4 years) and 23 were between 20 and 40 years (average age 28.35 years). In the teenage group, complaints were either abdominal pain (in 50 per cent), headache (in 21.15 per cent) or of both (in 28.84 per cent). Cramping pain was usually moderate, and less frequently rated as severe or slight, while headaches were either moderate or minor in intensity. Symptoms always occurred with menstruation in 25.49 per cent, during most periods in 58.82 per cent and during some periods in 15.68 per cent of this group. In some girls, symptoms lasted up to four days, but the average duration was 1.92 days. A rather different pattern occurred in the older group. All complained of cramping abdominal pain which was either moderate or severe in intensity, rarely of headache (in three patients) while seven women suffered from other discomforts, for example backache, neckache or leg pains. These symptoms invariably accompanied each menstrual period. Dysmenorrhea lasted an average of 2.33 days and more of these patients were severely incapacitated, in spite of therapy with APC.

Previous drugs used to treat dysmenorrhea were aspirin, APC and Panodynes.®

Treatment with Trancopal consisted of one 100 mg. tablet given on the first complaint of discomfort and continued at a dosage of four tablets daily until symptoms could be expected to subside on the basis of past experience. Although patients denied taking other drugs during this study, aspirin was available to most of them.

Results

The number of periods through which Trancopal was studied was not constant for each individual, some being only observed through one or two periods (see Table I). This circumstance, beyond our control, imposed an unfortunate limitation on the study. Response to therapy was constant from period to period in every case and, for this reason, the total number of 125 periods rather than the number of women is considered.

TABLE I. DISTRIBUTION OF THE TOTAL NUMBER OF PERIODS SHOWING THE RELIEF AFFORDED BY TRANCOPAL.

AMOUNT OF RELIEF	NUMBER OF PATIENTS 1st period	2nd period	3rd period	4th period	TOTAL NUMBER OF PERIODS
complete	36	22	7	5	70
moderate	26	11	1	0	38
slight	10	2	0	0	12
none	3	1	1	0	5
TOTAL	75	36	9	5	125

A separate analysis is made for each age group as well as for the whole series (see Table II).

TABLE II. SYMPTOMS USUALLY OCCURRING DURING DYSMENORRHEA.

AGE GROUP	ABDOMINAL PAIN			HEADACHE			OTHER
	slight	moderate	severe	slight	moderate	severe	
13-18 years	4	33	4	11	15	0	0
20-40 years	0	18	5	0	3	0	7

As shown in Table III, complete or moderate relief was obtained in 81.81 per cent of periods in the teenagers, and 93.74 per cent in the older women, while Trancopal was slightly or not effective in 18.17 per cent of instances in the former and ineffective in 6.25 per cent of the latter group.

TABLE III. THE AMOUNT OF RELIEF GIVEN BY TRANCOPAL IN BOTH AGE GROUPS AND IN THE TOTAL SERIES DURING 125 PERIODS.

	AGE GROUP					
	13-18 years		20-40 years		TOTAL SERIES	
RELIEF	number of periods	per cent	number of periods	per cent	number of periods	per cent
complete	30	38.96	40	83.33	70	56.00
moderate	33	42.85	5	10.41	38	30.40
slight	12	15.58	0	0	12	9.60
none	2	2.59	3	6.25	5	4.00
TOTAL	77		48		125	

When asked to compare Trancopal with other drugs (see Table IV), 63.46 per cent of teenage subjects found it more effective, 28.85 per cent the same, and 7.69 per cent less effective. In the older women, 82.61 per cent thought Trancopal better than APC which all had received previously, and 17.39 per cent considered it the same as APC. All women whose activity was usually restricted during menstruation were able to function normally while taking Trancopal. The associated symptoms of backache, neckache and leg pains were, in each instance, completely relieved. Side effects were noticeably absent and were not reported by any subject.

TABLE IV. A COMPARISON OF TRANCOPAL WITH OTHER DRUGS IN BOTH AGE GROUPS AND IN THE TOTAL SERIES OF 75 WOMEN.

RATING OF EFFECTIVENESS	AGE GROUP					
	13-18 years		20-40 years			
	number	per cent	number	per cent	number	per cent
more	33	63.46	19	82.61	52	69.33
same	15	28.85	4	17.39	19	25.33
less	4	7.69	0	0	4	5.33
TOTAL	52		23		75	

The following are representative case reports:

1. F.G., a 27-year old girl, has severe cramping neck and backache with each period but is never sick enough to be confined to bed. Her symptoms usually last two days and therapy with APC had been moderately effective. Complete relief from backache and abdominal pain was afforded by 100 mg. Trancopal four times each day and the drug is considered more effective than APC.

2. P.B., a 21-year old girl, has severe cramping each period which lasts two days; she is occasionally confined to bed for a few hours. Previous medication was APC which had been only moderately effective. Trancopal 100 mg. q.i.d. given for two days for each of three periods relieved cramping 15 to 20 minutes after each medication; cramping returned slightly by time of next medication. She received complete relief with Trancopal and considers it more effective than previous medication.

3. M.R., a 26-year old girl, has severe backache and cramping during each menstrual period. She is never sick enough to be confined to bed. Previous treatment with APC had been moderately effective. Trancopal given 100 mg. q.i.d. through two menstrual periods produced complete relief from cramping and backache. This girl considers Trancopal more effective than APC.

One patient who said that Trancopal did not relieve her pain nevertheless continued to demand the drug through each period. Observations of the behavior of these women by the Institute staff indicate the improvement produced by Trancopal was equal or better than that produced by other medication.

Discussion

The etiology and dynamics of emotions provoking dysmenorrheal symptoms are complex and poorly understood. It is even more difficult to explain variations in these symptoms at different ages during the menstrual years. The importance of marriage, child-birth and early menopausal problems has not been adequately evaluated, although there is evidence that after the first years of menstruation the incidence of dysmenorrhea rises sharply to reach a height of be-

tween 49.8 and 85.4 per cent of all teenage girls.[13] Reports of the incidence in all age groups vary from 3 to 47 per cent,[5] an indication that the frequency of dysmenorrhea declines with increasing age. Severe pain does not usually appear until the adolescent has menstruated for several years and the cycle has assumed a regular pattern.

Although this study provides no information about the incidence of dysmenorrhea and does not attempt to evaluate the environmental stresses which may have contributed to symptom development, there is some reason to suspect a difference in type and duration of menstrual pain between the two age groups. The older woman more often experienced severe cramping abdominal pain which was frequently associated with other bodily aches, while headache was quite rare in these women. Paradoxically this group obtained more relief than did the teenage girls. It was first thought that the predominance of headaches in the younger group explained this difference in responsiveness to Trancopal. A careful examination of individual case reports showed no correlation between the kind of pain and amount of subjective relief in the teenage girls. Dysmenorrhea that persists beyond adolescence may eventually be differentiated physiologically from that found only in the teen years. Such a finding would perhaps account for the variation in response to Tran copal and may clarify the relationship between the pharmacology of this drug and its beneficial effect on menstrual symptoms. The small sample studied here does not permit further speculation and it would be of interest to look for similar differential results in future work.

Summary and Conclusions

1. Trancopal was given in doses of 100 mg. four times daily to 52 adolescents and 23 adults with regularly occurring dysmenorrhea.

2. In a total of 125 menstrual periods complete or moderate relief was obtained in 86.4 per cent and slight or no relief in 13.6 per cent.

3. Trancopal was preferred to previous medication by 69.33 of the 75 women.

4. These preliminary observations show Trancopal to be a very satisfactory agent in treating symptoms of dysmenorrhea and warrant further clinical study with this new preparation.

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This is the second of a series of articles prepared for The Journal **under the auspices of the Oklahoma Heart Association and its committee on Professional Education, emphasizing the theme of the Association for the current year.**

Dyspnea in Congestive Heart Failure

T. EDWARD CUDDY, M.D.

T. Edward Cuddy, M.D., graduated from the University of Manitoba in 1954. He is a Fellow of the Royal College of Physicians of Canada. This paper was written during the tenure of a Daland Fellowship for Research in Clinical Medicine, in the Department of Medicine, University of Oklahoma School of Medicine. Doctor Cuddy is now a Fellow of the National Heart Foundation of Canada in the Department of Clinical Research at the Winnipeg General Hospital, and the University of Manitoba, Winnipeg, Canada.

This paper is from the Department of Medicine of the University of Oklahoma School of Medicine and the Medical Service, Veterans Administration Hospital, Oklahoma City, Oklahoma.

SHORTNESS OF BREATH is one of the earliest symptoms of congestive heart failure[1] and it often antedates measurable deviations in cardiopulmonary function. Dyspnea is a sensation common to most normal people after strenuous exercise and therefore its significance must be assessed relative to the degree of exertion producing it and the previous exercise tolerance of the subject.

Though dyspnea is a sensation and must have neuro-anatomical components, the peripheral sensory receptors and central connections are not precisely known.[2] Special sensory pathways might be involved or qualitative or quantitative alterations in the normal mechanical and chemoreceptors governing the rate and depth of breathing might lead to the awareness of respiratory difficulty. The lack of parallel between the objective and subjective evidence of dyspnea indicates that marked inequality between sensory stimulation and central perception and response exists in many patients. The words "shortness of breath" or "dyspnea" are often supplied to patients by their physicians and careful attention to detail is essential in eliciting the precise character of the complaints. Smothering, a feeling of suffocation, or the subjective inability to get sufficient air certainly constitutes true dyspnea. This may be confused with the desire to increase the depth of respiration, with fatigue and generalized weakness or localized chest weakness. Tachycardia may also produce chest discomfort and chest pain itself may be the basis of the thoracic distress rather than true shortness of breath.

Dyspnea is a manifestation of respiratory insufficiency[3, 4] and a consideration of the functional disturbance of respiration in congestive heart failure may help to clarify it.

A reduction of the vital capacity was one of the earliest pulmonary abnormalities demonstrated in congestive heart failure.[5] This may be due to vascular congestion and reduced distensibility of the lung.[6, 7] Total lung capacity, functional residual capacity, and residual volume are usually normal until failure becomes severe[8, 9] and are more abnormal in hypertensive heart disease than in mitral stenosis.[10] In addition to vascular congestion, encroachment on the lungs by a large heart, pleural effusion, or elevated

diaphragms, and respiratory muscle fatigue may further reduce pulmonary volumes.[8, 11] Lung volumes may be normal in the presence of pronounced dyspnea and are only consistently abnormal when failure is severe.

Hyperventilation also has long been known as a feature of cardiac dyspnea and is associated with a low arterial CO_2 content,[12] a low CO_2 tension and an elevated arterial pH.[13] Despite an elevation in BMR[14] there is an increase in ventilation per unit of oxygen consumed.[15] The exact mechanism of these adjustments is uncertain. Experimental pulmonary congestion has been shown to be associated with increased pulmonary stretch-fibre activity,[16] but accentuation of the Hering-Breur reflex is not the sole explanation in man.[17] Arterial oxygen tension is reduced, though oxygen saturation is relatively normal. This suggests perfusion of poorly ventilated segments of lung such as the congested lung bases in the upright position.[13, 18]

The maximal breathing capacity and timed vital capacity are usually not reduced to the extent seen in pulmonary disease. It has been suggested that cardiac asthma and obstructive breathing is more commonly seen in hypertensive heart disease than in rheumatic heart disease.[10] Only in severe failure and pulmonary edema is airway obstruction a consistent finding.

The force exerted by the respiratory muscles on the lungs has been indirectly measured with safety by the use of an intraesophageal balloon.[19, 20] Measurement of the change in lung volume in relation to the pressure necessary to produce it has permitted the calculation of distensibility or compliance. The resistance of the airways and the viscous elements of the lung and the total work of breathing also can be determined. Pulmonary compliance or dis- and is roughly proportional to the reduction tensibility is diminished in heart failure [7, 21] in vital capacity,[7] and total lung capacity.[22] Airway resistance is usually but slightly increased[7, 21] but may be abnormal in hypertensive heart disease.[10] It is always abnormal with pulmonary edema[23] and is increased in the supine compared to the sitting position.[24] The total work of breathing is abnormally high in congestive failure and it has been shown that the force applied to the lungs of cardiacs may be extremely high at levels of exertion causing no dyspnea in normal subjects.[25] However, normal subjects experience dyspnea when the intrapleural force is elevated to a similar degree, though the exertion necessary to produce it is much greater. It has been suggested that the pattern of shallow, rapid breathing seen in congestive heart failure may be mechanically advantageous in terms of energy expended in the face of decreased distensibility and maintaining adequate alveolar ventilation.[26]

The abnormal mechanics of breathing may be the result of many factors. Experimentally[27, 28] and clinically,[29, 30] any procedure increasing pulmonary blood volume and producing pulmonary congestion has resulted in reduced distensibility. Elevation of pulmonary vascular pressure is not closely related to reduced pulmonary compliance.[21, 31] Pulmonary congestion is associated with edema of the alveolar septae, fluid exudation into the alveoli and finer respiratory airways and if congestion is chronic as in mitral stenosis, fibrosis of the alveolar septae and thickening of the smaller blood vessels may be found.[32, 33] Changes in fluid air interfaces in the lungs may increase their resistance to change in shape due to increased surface tension.[34] All these changes may act to diminish lung distensibility and increase resistance to movement of air in and out of the lungs and they also may act to impede the passage of oxygen from the alveoli to the capillary blood. Thus reduction in the diffusing capacity for oxygen and an increase in the alveolar-arterial gradient for oxygen have been demonstrated in moderate and severe congestive failure.[13, 18] Though hyperventilation may partially compensate for these abnormalities, uneven distribution of inspired air and diminished ventilation of the dependent more congested portions of the lungs may further aggravate the situation. Increased lymphatic drainage may partially offset the effects of pulmonary plethora and vascular hypertension.[35] Even the fluid of a hydrothorax is not static but is in constant equilibrium apparently through lymphatic drain-

age.[36] Because of the increase in mechanical resistance and work of breathing in congestive failure, it is not surprising that the oxygen cost of ventilation is increased.[37] It is speculated, further, that the efficiency of the respiratory muscles to handle added airway resistance by increasing their oxygen consumption is reduced in congestive failure as it is in pulmonary disease.[38]

It may be concluded that clinical disability due to dyspnea may precede known abnormalities of pulmonary function. In mild to moderate congestive failure one usually finds hyperventilation with a slightly reduced arterial oxygen tension, a normal or low arterial CO_2 tension, a reduced vital capacity, decreased distensibility and increased work and oxygen cost of breathing. The dyspnea of cardiac failure may best be related to the altered mechanical properties of the lung. Subjective improvement in dyspnea after successful mitral commissurotomy, however, has very often occurred despite no change in pulmonary function or distensibility.[31] Cardiac asthma and obstructive breathing may be more common in hypertensive than in rheumatic heart disease. In the absence of pulmonary edema, however, signs of diffuse obstructive disease with reduced timed vital capacity, diminished maximal breathing capacity, and arterial hypoxemia with retention of CO_2 strongly point to primary pulmonary disease.

Changes in pulmonary function and vascular dynamics may be elicited early in congestive failure by making these measurements during exercise. Further investigations of the neurological origin, mediation, and perception of dyspnea are sorely needed to fully understand this familar but mysterious symptom.

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PLEURAL EFFUSION:

A Study of the Literature

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Concluded*

Pleural Biopsy

THE INABILITY to arrive at a definite diagnosis in cases of pleural effusion or pleural thickening by conventional methods, such as study of the fluid and roentgenography, has led to use of biopsy of the parietal pleura. This may be performed by open surgical technique or needle biopsy. The surgical biopsy is performed by making an open incision of several centimeters length along an intercostal space, grasping the exposed parietal pleura and excising a piece of it. Suction may be immediately applied to the opening to minimize pneumothorax and the opening is closed by sutures. Morbidity is slight and mortality is essentially nil. Histological diagnosis may thus be made and sometimes bacteriologic diagnosis also.[71, 72, 73]

Sutliff et al,[71] in 1954, first reported *surgical biopsy* of the parietal pleura and were able to obtain the diagnosis by microscopic and bacteriologic examinations in a phenomenal 20 of 21 cases. Another group[72] was able to obtain the diagnosis in 20 of 50 surgical biopsies.

Donohoe et al,[74] have reported 54 surgical biopsies of the pleura. Twenty-one of these had had previous aspiration biopsies which had yielded an inadequate specimen or a diagnosis of "nonspecific pleuritis." Twenty-eight of these 54 cases were found to be granulomas or malignancies and a definite diagnosis could not be made by biopsy in the other 26.

Needle biopsy of the parietal pleura was first reported by DeFrancis et al,[75] in 1955 and, because it is a much less difficult procedure than surgical biopsy, the literature has since been generously supplied with series of cases.[21, 74, 76, 77, 79, 80, 81, 82, 83] The Vim-Silverman needle has generally been used as described originally by DeFrancis. However, entirely different types of needles have been described by Abrams[84] and Cope[85] which are more practical.

*Part I appeared in the August issue of **The Journal**.

TABLE V
NEEDLE BIOPSIES

Author, Year	Number Patients	Number Biopsies	Cases Diagnosed	Diagnosis Granuloma	Diagnosis Malignancy	Diagnosis Nonspecific pleuritis	Diagnosis Normal	Insufficient Specimen
(Heller, Kellow & Chomet, 1956)*[76]	20	22	9 (45%)**	5	4	9	—	2
Heller, Kellow & Chomet, 1957[77]	45	79	14 (31%)	6	8	28	—	3
(Donohoe, Katz & Matthews, 1957)*[21]	45		20 (44%)	—	—	—		12
Donohoe, Katz & Matthews, 1958[78]		78	30 (38%)	22	8	29	1	18
(Mestitz, Pollard & Purves, 1957)*[79]	116		72 (62%)	60	12	35		9
Mestitz, Purves & Pollard, 1958[80]	152		97 (64%)	70	20			2
Harvey & Harvey, 1958[81]		42	14 (33%)	8	6			
Welsh, 1958[82]	17		10 (59%)		10			
Weiss, 1958[83]	31	31+	23 (74%)					

*Cases apparently included in later series.
**Number of patients used as denominator when stated. Otherwise number of biopsies used as denominator.

The results obtained by various authors performing needle biopsies of the pleura are summarized in Table V.

Because biopsy of the pleura is a valuable addition to our diagnostic armamentarium its use is becoming more common and its exact place must be found.

Needle biopsy should be performed with the precautions of normal blood coagulation, careful selection of the biopsy site by fluoroscopy, and the lung should be separated from the chest wall.[77] The complications are few and of minimal seriousness and the morbidity no greater than for thoracentesis. There should be no fear of spreading malignancy along the needle tract.

Due to the small specimen of tissue obtained by needle biopsy there is probably a limit to the diagnostic efficacy of this procedure. Even though the parietal pleura might be thickly studded with tubercles or malignant implants a diagnosis cannot be made if the few square millimeters of pleura *obtained* is not so involved. Because of the much larger specimen obtained by surgical biopsy, somewhat better results are to be expected. Success in some cases of surgical biopsy after the failure of needle biopsy has been shown.[21, 78] Breckler et al,[73] performed both needle and open surgical biopsy on five patients and then stated: "The open biopsy was no more difficult and tissue specimens obtained were so superior that the needle biopsy method was abandoned." These authors were able to perform surgical biopsy under local anesthesia through an incision only three to four cms. long, allow ambulation the same day and observed no ill effects. However, open surgery is generally not advised in the initial attempt at biopsy because it necessitates the presence of a qualified surgeon, an operating room, and is a more formidable procedure than the needle biopsy with which any physician can become competent.

Although some authors would perform needle biopsy at the time of the first diagnostic thoracentesis in any case[78] there are some cases where the diagnosis appears obvious and this procedure may be omitted. However, generally the following diagnostic approach of Donohoe[86] is advisable: "At the time of the initial thoracentesis, aspiration biopsy should be performed. If a specific cause is determined, no further diagnostic studies would be needed and appropriate treatment may be instituted. If such a specimen is either inadequate or inconclusive, either a repeat aspiration biopsy is in order or surgical biopsy through a small intercostal approach should be undertaken. A frozen section should be obtained and if a specific cause is demonstrable, the incision may be closed. If the result is not diagnostic, then the surgeon should extend the incision and full exploration with appropriate biopsy and/or resection can then be carried out, followed subsequently with appropriate treatment."

Other Examinations

Diagnostic procedures should not be limited to radiographs, fluid examinations and pleural biopsy. Sputum should be studied

for various pathogens, including particulary tubercle bacilli, in appropriate cases. Cytological examination of the sputum may also be very helpful. Bronchoscopy is indicated in many cases. The tuberculin test, if negative, using *fresh* material in *full* strength will virtually rule out tuberculosis as the etiology.[19, 61]

Thoracoscopy, with biopsy when feasible, has been suggested as a more precise method of diagnosis than has previously been available. Lloyd[87] performed this procedure in 23 consecutive, unselected cases of undiagnosed pleural effusions without complications. Twelve of 16 such biopsies yielded diagnostic material and in others "gross findings were of great value in respect both to diagnosis and to essentil therapy." However, he stresses that it must be performed before a coagulum forms on the pleural surface. Fleishman et al,[88] were able to make a diagnosis of tuberculosis by thoracoscopy with biopsy in 28% of cases where other procedures had failed.

Although many procedures for diagnosis have been discussed it is not uncommon that the ulitmate one, thoracotomy, must be performed. Although there is some morbidity and discomfort invariably associated with thoracotomy its influence on diagnosis and therapy may be invaluable. Unfortunately, even this sometimes fails to be helpful.[89]

Therapy

Therapy in cases of pleural effusions consists of two phases: (1) removal of fluid and; (2) treating the underlying cause.

Pleural fluid is removed for the following reasons: (1) diagnosis; (2) therapy, and; (3) to prevent fibrothorax. Diagnostic aspects have been discussed. Therapeutically it improves respiration and may reduce toxicity.[56]

In cases of intrapleural fluids, especially exudates or hemothorax, there may be organization on the pleural surface of some of the precipitated protein. With passage of time this becomes more fibrous and, if extensive, may cause considerable pulmonary insufficiency due to restriction of the underlying lung. If this situation results then decortication of the pleura may be necessary. However, aspiration of as much of the fluid as possible, and repeating aspiration if necessary, to keep the pleura "dry" will help to prevent this complication. Streptokinase-streptodornase mixtures may be useful, if the cellular or protein content of the fluid is high, by making more complete aspiration of the fluid possible.

The method of thoracentesis is essentially the same whether done for diagnostic or therapeutic purposes. This procedure will not be discussed since it is adequately described in many texts.

Treatment of Malignant Pleural Effusions

Discussion of treatment of the *underlying cause* of the pleural effusion is largely self-explanatory and considering the large number of causes listed in Table II is too great a task to be attempted here. However, an exception will be made in the case of malignant pleural effusions.

In order to cope with the large and rapidly recurring pleural effusions sometimes associated with malignancies, radioactive gold (Au^{198}) colloid has been used intrapleurally. This is administered through a throracentesis needle by use of special equipment necessary to prevent excessive radiation exposure to personnel The exact mechanism of action is not definitely known. Various studies reveal "good" or "fair" inhibition of fluid formation in slightly over half of all cases treated.[90, 91, 92, 93, 94, 95] The best results appear to be when the primary malignancy is of the breast.[92, 93, 94, 95, 96] Radioactive gold colloid should not be considered as a method of treating the malignancy but as a means of keeping one of its complications—pleural effusion—under reasonable control. Sometimes it will make it unnecessary to perform additional thoracenteses although many had been done before. A second instillation of Au^{198} colloid is also sometimes helpful if there is some recurrence of fluid following the first one.

Jacobs[97] has reported the use of radioactive chromic phosphate ($Cr\ P^{32}O_4$) in 41 cases of malignant pleural effusions. The 61% "good" results obtained compare favorably with Au^{198} colloid but the real ad-

vantages are that Cr $P^{32}O_4$ is simpler to handle, safer and less expensive.

Nitrogen mustard has also been administered intrapleurally in malignant pleural effusions. A technique similar to Weisberger et al's[98] is recommended. There is less nausea, vomiting and leukopenia with intrapleural than with intravenous nitrogen mustard.[98] A comparison of the efficacy of Au^{198} colloid with nitrogen mustard showed no significant difference.[96] However, it has been said that nitrogen mustard is superior to radioactive gold colloid since it is "easier and simpler to administer, no special facilities are required for its use, the drug is always available, it is less expensive to the patient, and it is not as dangerous to personnel involved."[98] Therefore, nitrogen mustard may be considered the "treatment of choice" for malignant pleural effusions although alternation with a radioactive agent (Cr. $P^{32}O_4$ or Au^{198}) may be of further advantage.

Bateman et al,[99] have reported the intrapleural instillation of 10 to 30 mg. of triethylene thiophosphoramide (Thio TEPA) for malignant pleural effusions. "Control" of the effusions for one to nine months was obtained in 10 of 17 patients with breast or ovarian cancers.

Treatment of malignant pleural effusions has also been attempted by surgical means. MacQuigg[100] stated, "We believe that it is mandatory when a thorax is opened for what proves to be irresectable malignancy, or for any other condition which may cause recurrent pleural effusions or empyema, that the surgeon obliterate the pleural cavity before closing the thorax by abrading all parietal surfaces with dry gauze." He claimed there was no significant loss in pulmonary function by this procedure. Chambers[101] obtained successful control of malignant pleural effusions in 17 of 20 cases by the injection of a talc suspension into the pleural space.

Another method used in an attempt to cope with malignant pleural effusions is by the use of hollow glass buttons.[102, 103] These are surgically placed in the chest wall so that the fluid may drain subcutaneously. Ample evaluation of this method has not yet been made.

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Aneurysms of the Aorta

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WITHIN THE PAST DECADE, the surgical treatment of aneurysms of the aorta has become a major medical advance. These lesions which had previously been but of academic and pathologic concern, have now become of major surgical interest.

It seems worth-while at this time to review the problems associated with aortic aneurysms and to present cases illustrating what may be achieved in the treatment of these lesions.

Pathology

William Osler stated some five decades ago[31] that at least 90% of aortic aneurysms were located in the thoracic aorta and that nearly all of these were due to syphilis. A majority of patients were individuals in their fourth and fifth decades of life and in many instances the victim was a Negro. Many authors now report an increasing incidence of arteriosclerotic aneurysms in the abdominal aorta which appear in individuals particularly in their sixth and seventh decades and in increasing frequency in the abdominal aorta.[4, 9, 12, 20, 23, 29, 39, 40] This changing pattern of disease reflects the generally increasing age of our population and a notable reduction in the morbidity from syphilis. Finally, traumatic aneurysms of the aorta appear also to be on the increase.[17, 22, 24, 32, 36, 37] These lesions occur with high frequency in the distal aortic arch just

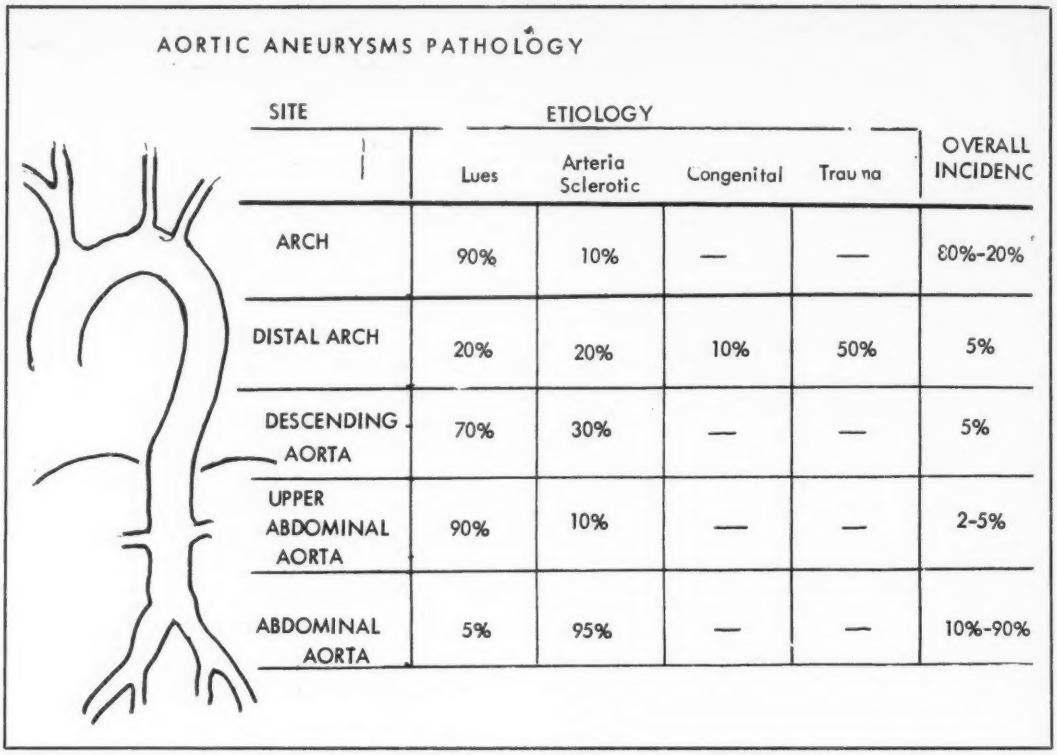

Fig. 1. Distribution of aneurysms of the aorta and incidence of the etiologic factors.

beyond the ligamentum arteriosum and are the result of rapid deceleration injuries of the type sustained chiefly in automobile accidents.

Figure 1 shows the changing pattern of aneurysms of the aorta. At present, approximately half occur in the abdominal aorta and at least 95% of these are arteriosclerotic in origin. Of the thoracic aneurysms, probably 10% are traumatic or congenital and 10% are arteriosclerotic. It is probable that this pattern will also change over the course of the next several decades.

Prognosis

A critical examination of any disease when left untreated is necessary to evaluate the efficacy of any suggested form of new treatment. Figure 2 demonstrates the natural course of abdominal aneurysms. Compared to life expectancy of the normal population at the age of 65 (87.9% alive in three years and 79% in five years) the average data obtained from seven authors[3, 5, 20, 23, 28, 34, 39] indicated that 44.9% of individuals with abdominal aneurysms will be alive in one year, 22.4% at the end of three years, and 10.4% at the end of five years. While all of these individuals did not die of aneurysmal rupture, a significant proportion did. It is also recognized that individuals with aneurysms in excess of 7 cm. in diameter or those having significant symptoms as a result of their aneurysms have a much poorer prognosis.[12, 23] However, some individuals with abdominal aortic aneurysms are asymptomatic until the time of fatal rupture, so that size and symptoms are not entirely reliable in the estimation of prognosis. In brief, a patient with an aortic aneurysm will probably die of rupture of his aneurysm unless he has other severe systemic or cardiovascular-renal disease which would greatly reduce his normal life expectancy.

Diagnosis

The diagnosis of aneurysms in the great majority of cases is not difficult. Aneurysms located in the thoracic aorta chiefly express themselves by pressure upon the major adjoining viscera such as the esophagus, tra-

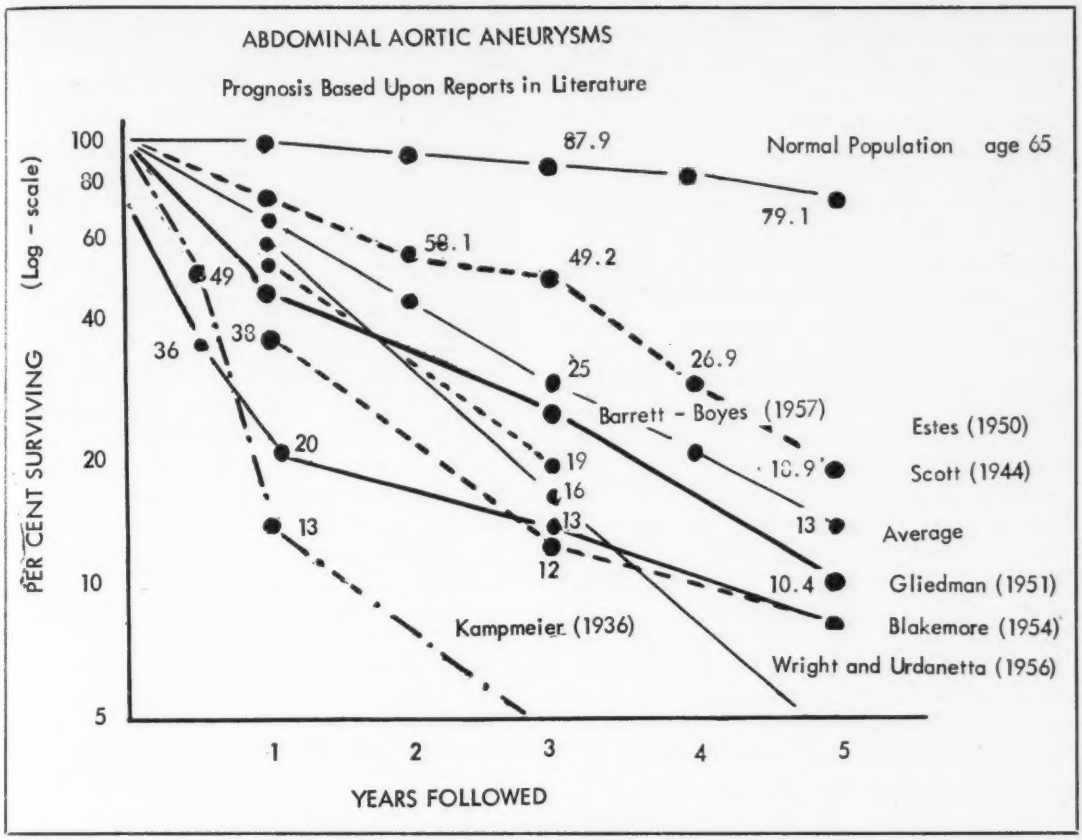

Fig. 2. Natural course of untreated abdominal aneurysms.

chea, major bronchi or bony structures within the thorax. Suitable x-ray studies including roentgenograms taken in various positions, fluoroscopy and angiocardiography are helpful to identify and localize the lesion.

In the abdominal aorta, aneurysms may be entirely asymptomatic and noted by the physician during the course of a routine examination. When symptomatic, pain and a mass are usually recorded. Pain may be located in the abdomen, back, flank or extremities and has no characteristic pattern. Rupture into the duodenum or the inferior vena cavae, or more usually, into the retroperitoneal space is the rapid termination of the disease. In the presence of an abdominal aneurysm, fever, leukocytosis and anemia should immediately suggest the possibility that the aneurysm is leaking.[30] Supine and lateral radiographs of the abdomen usually demonstrate its calcified outline and are helpful but not pathognomonic. Aortograms are not necessary except in unusual occasions to exclude other abdominal masses.

Treatment

It is now commonly agreed that the treatment of aortic aneurysms consists of excision of the diseased segment with replacement by either human or prosthetic graft.[1, 2, 6, 7, 8, 15, 16, 18, 19, 21, 25, 27, 33, 38] Whether such a procedure may be successfully carried out depends upon a reasonable selection of patients. In the patient with a recent coronary occlusion or in patients with severe renal disease, it would be unwise to suggest operation. It is well known, however, that patients with healed infarcts tolerate major operation well. It is generally conceded that any patient who is in reasonably good physical condition and who has an aortic aneurysm should have excision and graft replacement.

There are definite problems involved in treatment of aneurysms of the aorta depending upon their location. For aenurysms within the aortic arch, the technical problems of replacement and the operative mortality, are still appreciable. Best results have been achieved in saccular aneurysms in which lateral aortorrhapy has been performed. For fusiform aneurysms of the ascending thoracic aorta some type of pump oxygenator by-pass must be employed during the excision and replacement by the graft.[16] For aneurysms of the transverse aortic arch, temporary-permanent by-pass shunts have been successfully employed particularly by DeBakey and Cooley.[16] For aneurysms of the distal aortic arch, two methods in general have been employed in the past. The first of these has been the use of hypothermia with cooling to 28 to 32° centigrade to prolong the safe time of cross-clamping of the aorta during excision of the aneurysm and its graft replacement. The second consists of a temporary by-pass between the aorta or left atrium above to the femoral artery below.[22, 41] Pump perfusion of the distal aorta allows satisfactory renal blood flow and appears to be most helpful in lowering aortic pressure proximal to occluding clamps. Aneurysms of the lower thoracic aorta and of the upper abdominal aorta will probably best be handled by by-pass shunts alone.[15]

For aneurysms of the abdominal aorta below the renal arteries, it is not necessary to use adjuvants during excision and replacement of the aneurysms. Patients are able to tolerate cross clamping for up to two to three hours at this level without untoward effects to either pelvic viscera or lower extremities. Most authors suggest regional heparinigation by way of the iliac vessels during this period of cross clamping to prevent thrombosis.

Illustrative Cases

The following cases illustrate the problems and treatment in aneurysms of the aorta.

Case 1:

C. E., a twenty-seven year old man was involved in an automobile accident on October 21, 1950. He sustained a ruptured spleen, which necessitated its removal, and a hemothorax requiring closed drainage. He was hospitalized for three months. He was then asymptomatic until June, 1956, when he began to complain of intermittent left chest pain. Conventional radiographs of the chest revealed a mass in the distal aortic arch measuring 6.5 by 5.3 by 4 cm. in size confirmed as an aneurysm by thoracic aortograms done on June 27, 1956.

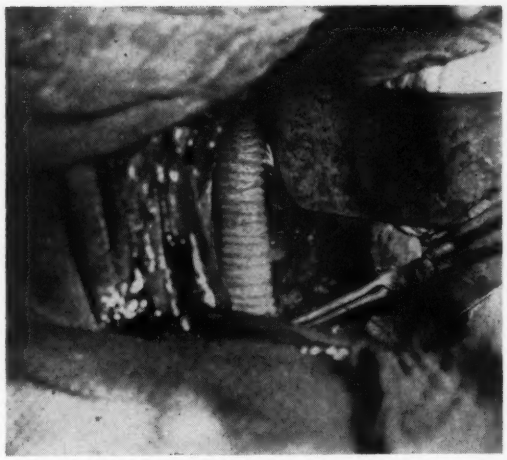

Fig. 3. A Tapp-Edwards crimped nylon graft in place following resection of an aneurysm of the distal aortic arch.

On July 11, 1956, the aneurysm of the distal aortic arch was resected under hypothermia (32 to 30 degrees centigrade) with replacement by a Tapp-Edwards crimped nylon graft (Figure 3). Total time of aortic occlusion was 60 minutes. Postoperatively, the patient made an uneventful convalescence except for mild myelopathy, secondary to aortic occulsion, characterized by weakness of lower extremities, bilateral knee and ankle clonus and hyperactive deep tendon reflexes. The patient is able to walk unassisted and remains well to date.

Case 2:

M.M.S., a 23 year old woman was admitted to the hospital because of a productive cough, hemoptysis and left chest pain. A diagnosis of coarctation of the aorta with associated aneurysm and bronchiectasis of left lower lobe was eventually established

although the blood pressure was only 126/60 in the upper extremities and unobtainable in the lower extremities. Over the course of the next several years she noted progressive exertional dyspnea and substernal chest pain. She was admitted to the hospital in July, 1955 for operation.

On July 15, 1955, the coarctation and the aneurysm just distal to it, were excised, continuity of the aorta being restored by inserting a four centimeter reconstituted lyophilized human aortic homograft. The patient was dismissed from the hospital in two weeks after an uneventful convalescence. She expired two and a half months following operation. Autopsy revealed extensive necrotizing pneumonia of the entire left lung, but the aorta and graft were intact and lined with a smooth layer of endothelium. The bronchiectasis of the left lower lobe undoubtedly contributed to the eventually fatal pneumonitis.

Case 3:

R.H., a 53 year old man, had lower abdominal discomfort for some years, and was found by his local physician to have an abdominal aneurysm in the spring of 1958. Physical examination revealed a pulsating mass to the right of the mid line just below the umbilicus consistent with an abdominal aortic aneurysm.

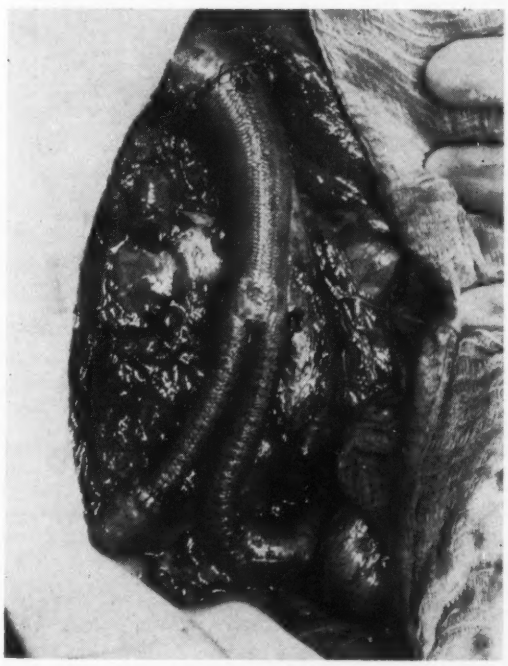

Fig. 4. Bifurcation Tapp-Edwards nylon graft used following resection of abdominal aortic aneurysm.

On March 2, 1958, resection of the abdominal aortic aneurysm was performed with replacement by a bifurcation Tapp-Edwards nylon graft (Figure 4). The patient made an uneventful convalescence and remains well to date.

Summary

Within the past decade aortic aneurysms have become of considerable surgical as well as clinical interest. A change in the age distribution and the etiologic agents causative of these aneurysms has been noted. There are an increasing number of arteriosclerotic aneurysms involving the abdominal aorta. It is also likely that posttraumatic aneurysms of the distal aortic arch are also on the increase. Aneurysms of the aortic arch itself, numerically greater, are now decreasing in frequency.

A study of the prognosis of aortic aneurysms indicates a greatly reduced life expectancy when compared to other individuals in the same age group. The chief complication from aortic aneurysm is rupture; over half of individuals with aortic aneurysm will be dead within three years and only 10% will be alive at the end of five years.

The diagnosis of aortic aneurysms is usually not difficult and in the thoracic aorta the symptoms and signs are largely due to pressure upon adjoining viscera. Within the abdomen, pain and a pulsatile mass are the chief symptoms and findings. Aortography is usually not necessary for the diagnosis.

The treatment of these lesions consists of excision of the aneurysm with replacement by homograft or by prosthetic graft. The technical problem of replacement of an aneurysm of the proximal and transverse thoracic arch is still appreciable. For aneurysms of the distal arch, the lower thoracic and the abdominal aorta surgical replacement is technically less troublesome.

Three cases illustrating aneurysms of the aorta have been presented, two of these occupying the distal aortic arch and one the abdominal aorta.

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ACADEMY, *n.* (from academe). A modern school where football is taught.

AGE, *n.* That period of life in which we compound for the vices that we still cherish by reviling those that we have no longer the enterprise to commit.

From the Devil's Dictionary by Ambrose Bierce
—Sagamore Press, Inc.

MEDICAL CENTER

Fibrinolytic Activity in the Body

JOE BILLS REYNOLDS*

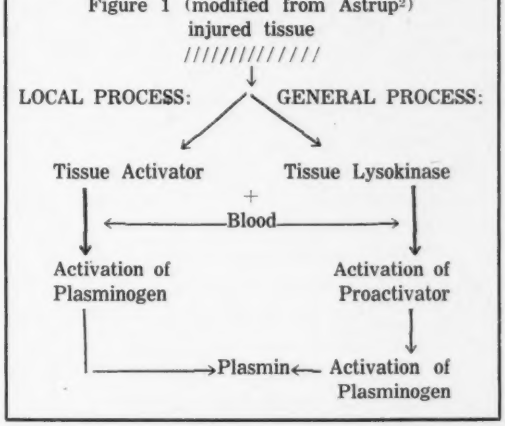
DURING RECENT YEARS, there has been an increased interest in the fibrinolytic process. This is the process by which the living organism dissolves blood clots and disposes of fibrin deposits. The present indication is that the fibrinolytic system is one of the fundamental mechanisms in physiology, and that physiologic and chemical research may elaborate the full nature of the enzymes associated with this process.

Research on fibrinolysis was done as early as 1936, but nothing concrete was obtained until about 1948. One of the first papers pertaining to this process was a short review on the mechanism and significance of fibrinolysis by Macfarlane and Biggs in 1948. Research since then has shown this process to be much more complicated in the organism than was proposed at that time.

Of great importance among the clinical findings is that the hemorrhagic conditions observed in obstetrical cases and in carcinoma of the prostate are caused by circulating fibrinolytic agents. The effect of increased fibrinolytic activity in blood due to immune reactions and shock, seems to be under the control of endocrine factors.[4]

Two mechanisms exist in the organism for producing fibrinolytic activity. One is a local process produced by the release of an *activator* from injured tissue. The second activation mechanism changes a *proactivator* in blood to an *activator*. This change is of a general character as it is rapidly carried by the blood stream to all organs of the body. These concepts are presented in the following schema.

Figure 1 (modified from Astrup[2])



The purpose of the local process is to maintain tissue repair and dissolve local fibrin deposits, such as small localized thrombi. Fibrin deposits and small thrombi are formed and dissolved daily as a normal occurrence in the organism due to minor injuries produced during the stress of daily life.[2] It is therefore an important physiological mechanism.

Today, medical research is still in an expanding phase and no final concept of the complete fibrinolytic process can be presented. It is the intention of this paper to present in a concise form the present status of research already completed.

History

Blood contains an inactive precursor of a proteolytic enzyme which is converted into active enzyme by different substances in

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vitro and under various conditions in vivo. Over the years, from previous work on this enzyme system, different terms have been applied to the components involved. Such terms as plasma trypsin (Schmitz 1936), and serum tryptase (Ferguson 1943) are unsuitable because they imply a relationship between the enzyme in blood and trypsin. The terms *fibrinolysin* for the active enzyme, *profibrinolysin* for the precursor, and *antifibrinolysin* for the inhibitor in the blood, were proposed by Ryder in 1947. This terminology, although still in use, appears undesirable since the enzyme is not specific for fibrin, but is a general proteolytic enzyme capable of splitting a certain type of peptide linkage.[14]

Fibrinolysis was known before 1933 to develop in blood by a spontaneous process, but other than the ultimate formation of a proteolytic enzyme, the nature of this reaction was unknown. In 1933, Tillett and Garner observed that a fibrinolytic agent was produced by strains of hemolytic streptococci and these authors considered it to be a fibrinolysin. In 1941, Milstone showed that the fibrinolytic effect of the streptococcal substance depended upon a factor in human blood serum which he called a "lytic factor." Later investigations showed that the "lytic factor" was an enzyme precursor which could be changed into a fibrin-splitting proteolytic enzyme by chloroform treatment or the addition of the streptococcal agent.[7]

As a result of these findings a change in terminology was proposed by Astrup and Mullertz, the enzyme proper being called *plasmin* and its precursor, *plasminogen*. The plasmin inhibitor in blood is termed *antiplasmin* and the streptococcal factor, previously called fibrinolysin , is now termed *streptokinase*, since it is not a fibrinolytic enzyme proper, but an agent which effects the transformation of the precursor into active enzyme.[2]

Fibrinolytic System

The foregoing discoveries were of great importance, but still they failed to explain the stepwise development of fibrinolytic activity in the organism. The physiologic basis of this process had to be sought in reactions in vivo produced by compounds originating in the body.

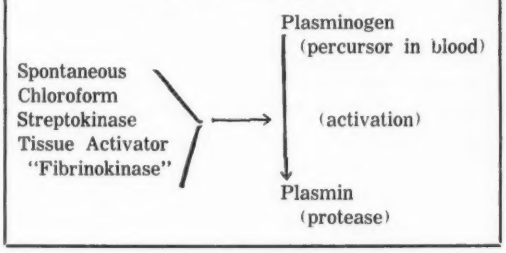
Activation Scheme of 1947

From an approach such as this, Astrup in 1947, assumed that the physiologic activation of a fibrinolytic enzyme in the organism resulted from an interaction between an enzyme precursor in blood and an activating agent released from the tissues. He and his associates demonstrated this activator and called it fibrinokinase which was later changed to the term, "tissue activator" of plasminogen.[2]

Another fact also known in 1947 was that the fibrinolytic process was inhibited in blood plasma by agents, of which antiplasmin, present in plasma in large amounts, was thought to be related to the known antitryptic effect of serum.

The following activation scheme was the one proposed by Astrup in 1947 illustrating the few facts known at that time.

Figure 2 (from Astrup[2])



Activation Scheme of 1954

Through later experimental results, Astrup was able to propose another activation scheme in 1954, which although still incomplete, gives an explanation of most of the present observations of the fibrinolytic system in vitro.[2] This scheme is now generally accepted, but it should be kept in mind that the existence of a proactivator in human plasma was postulated merely to explain why the plasminogens of other species are not activated by streptokinase (SK) alone, but require the presence of human plasma. Proactivator has not as yet been isolated, purified, or even demonstrated to be a part of this activity, except by indirect inference.[10]

This scheme differs from the one of 1947 in that the transformation of an enzyme

precursor (*plasminogen*) into the active protease (*plasmin*) can be performed in different ways. The mechanism of spontaneous activation is unknown. Chloroform probably has a denaturing effect thereby producing activation. Trypsin shows enzymatic proteolytic activity in its formation of plasmin and shows characteristics of a plasminogenase. The activator of plasminogen found in tissues may react by forming a stoichiometric complex.[13] Urine contains an activator of plasminogen, urokinase, which acts by enzymatic reaction following kinetics of a first order reaction. In blood, human milk, tears, and other body fluids, enzymatically acting activators of plasminogen are also found. The nature of these activators formed in human blood by the action of streptokinase as an activator precursor has been proven.[9]

In some cases, an agent activating the plasminogen proactivator has been found in blood and human tissues. These compounds are classified as lysokinases.[2]

The mechanism of inhibition has also been found to be highly complicated. The plasma contains two inhibitory components for plasmin and these have been found to be different serum factors, but have not been shown to react specifically on plasmin or on other enzymes. These factors are "alpha-1-antiplasmin" and "alpha-2-antiplasmin."[10]

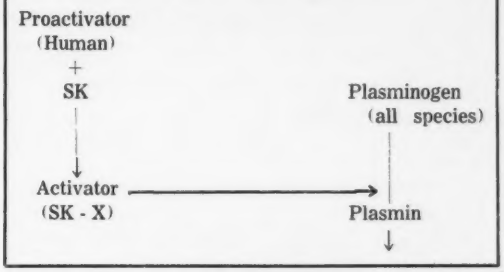
Current Activation Scheme

Kline and Fishman expressed the preceding fibrinolytic system of Astrup (figure 3) as follows:

Physiologic Role of Fibrinolysis

The processes of *blood coagulation* and

Figure 4 (from Kline[10])



clot lysis are equally important as defense mechanisms for the human body. The complexity of these processes is due to the fact that the knowledge of the mechanisms is still incomplete, and that most of the substances that play a part have not yet been obtained as pure chemical entities.

Until recently, the physiologic role of fibrinolysis was considered unimportant in relation to coagulation, but today, with the appearance of new drugs, more advanced medical facilities, and a better understanding of human physiology, there is also a greater need for an efficient and effective fibrinolytic enzyme for therapeutic use. As progress is made in pathologic cases, which involve delayed circulation due to clot formations, an enzyme to aid in restoration of normal circulation would be of great importance clinically.

Clot formation and destruction are very closely related; therefore, the following figure is presented to illustrate these facts.

In pathologic cases, where fibrin deposits are so large that they persist for a considerable time, thus interfering with blood circulation, increasing the fibrinolytic activity

Figure 3 (from Astrup[2])

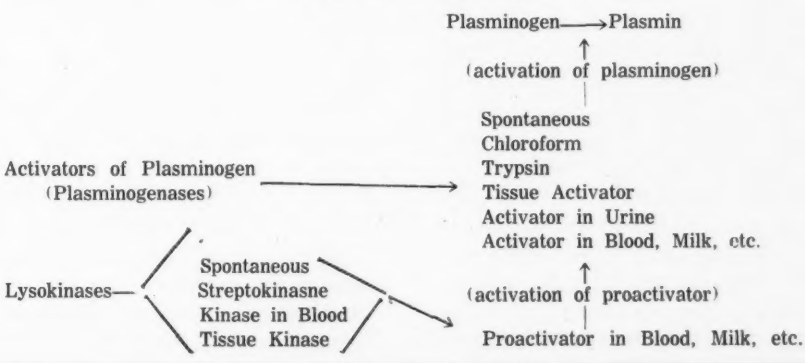
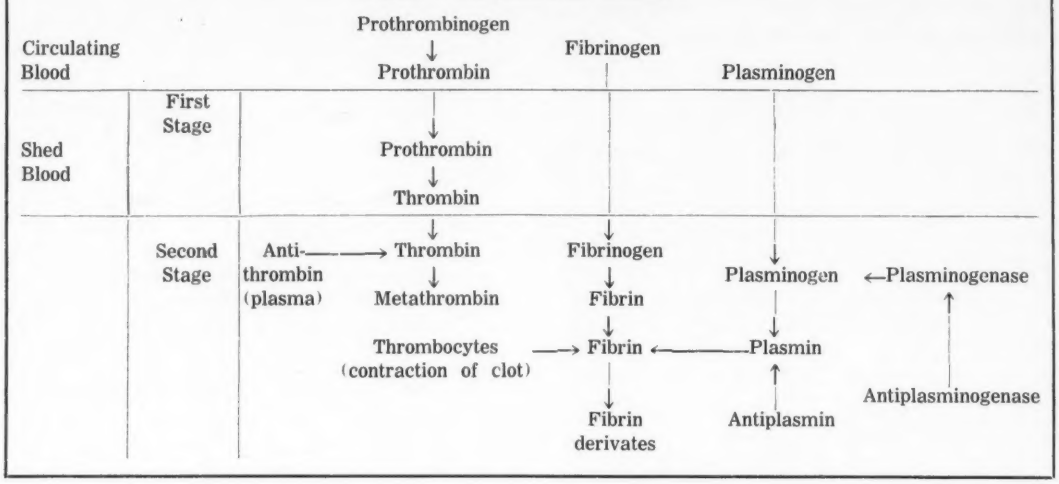


Figure 5 (adapted from Houssay[6])



in the organism will be of therapeutic use. The most direct approach is by introducing a potent fibrinolytic enzyme into the blood stream. The most promising enzyme at the present is purified plasmin.[2] The use of plasmin in the therapy of thrombosis awaits the preparation of highly purified human preparations in large amounts.[5] Experiments seem to point to the observation that the older the clot, the less effect human plasmin has on it. Increased clot density may thus be a resistance factor.[20]

Blood clotting is often impaired in individuals with severe liver damage. Fibrinolytic activity is also observed more frequently in patients undergoing hepatic lobectomy than in patients undergoing other operations. This activity may be due either to increase in plasminogen or its activator or decrease in concentration of an inhibitor.[23] Regardless of the cause, the liver seems to show indications of fibrinolytic control.

The presence of an activator in urine serves a definite physiologic function. The occlusion of the urinary passage with clotted fibrin could be harmful to the organism; therefore, this activator serves the purpose of making possible the rapid resolution of clotted blood in the urinary system.[2] Experiments on other fluids of the body such as human milk, lacrymal fluid, saliva, and seminal fluid indicate that these also contain fibrinolytic systems which assist in clot removal.[9] Amniotic fluid is somewhat different in that it has no fibrinolytic activity, but does contain large amounts of a proactivator of plasminogen.[2]

In shock, the indications point to all available proactivator in the blood being transformed into activator by a specific agent, the nature of which is not known.[4] This agent or a similar labile component is present in small amouts in normal human blood.[2]

The use of the fibrinolytic enzymes in medicine is at the present time very limited. As was stated earlier, these enzymes have either bad side effects of they are limited in production, as is plasmin. The ultimate desired goal is the use of a fibrinolytic enzyme for the dissolution of intravascular clots, which are detrimental, at that particular time, to a patient's health.

The three main areas which have received the greatest attention are: pancreatic trypsin, streptokinase, and plasmin. Of the three enzymes, trypsin is too generally proteolytic (for systemic use), and streptokinase must be further purified to eliminate side effects. Plasmin seems to possess the requirements of the ideal clot dissolving agent, but must receive more clinical trial to be proven.[7]

Plasminogen and Plasmin

From various sources there is evidence that the proteolytic, fibrinolytic, and fibrinogenolytic effects produced by different blood preparations are utilmately caused by a single enzyme, plasmin. To obtain correct

information about the properties of plasminogen and plasmin, it is necessary to estimate the activity of the preparation using plasminogen-free substrates. Plasminogen preparations have been obtained by successive isoelectric precipitation, ammonium sulphate precipitation, and by a combination of both procedures. Human plasmin is generally prepared from the plasminogen preparations by activation with streptokinase. Small amounts of streptokinase produce a complete activation of plasminogen due to the large quantities of proactivator in all human serum.[14] In addition to plasmin, active preparations also contain streptokinase, activator, and often inhibitors. Purification by heating at 100°C. and pH 1.8 for 30 minutes was found to destroy streptokinase, activator, and almost all inhibitor with moderate loss of plasmin.[1]

Plasmin is a proteolytic enzyme which is thermostable and resistant to acid.[11] It is estimated to have a molecular weight of 108,000 and an isoelectric point of 6.2.[19]

Plasmin destroys clotting components of blood, acellerin and prothrombin, while thrombin is unaffected. Plasmin and trypsin are distinctly different enzymes and enterokinase does not activate plasminogen.[10]

The pH of optimum activity of plasmin has been established to be in the range 7.5-8.3. Statements about the stability of plasmin have been contradictory.[14] Christensen found a maximum of stability at a pH of 7.0-7.4 with a rapid loss above and below these values in the pH range 3.5-11. On the other hand, Mullertz found a high stability at acid reactions.[14] Sherry also noted a high stability of human plasmin at pH 2.0.[17]

Activation of Plasminogen

Activation of Plasminogen by Fractionation and Chloroform

Proteolytic and fibrinolytic activation have been produced by treatment of serum or globulin solutions with ether, ethanol, thymol, acetone, and other alcohols. However, reproducible results were not always obtainable.[14]

Chloroform is the most often used organic solvent as an activating agent in the production of protease effects in blood. The advantage of using chloroform is that no foreign protein is added. Its disadvantage is that results with it are not always reproducible. The mechanism of activation is still unknown, but it has been attributed to the destruction of an inhibitory compound followed by a spontaneous activation process of the autocatalytic type.[2]

Activation of Plasminogen by Protease

The property of trypsin to activate plasminogen has been demonstrated by various workers independently. The rate of activation was increased by increasing the concentration of trypsin and the final amount of plasmin formed was proportionate to the concentration of plasminogen, but within certain limits independent of the trypsin concentration. It has been assumed that trypsin probably produces plasmin by proteolytic cleavage of the plasminogen molecule.

Other proteases and their effects on plasminogen have also been studied, but all failed to activate human plasminogen.[14]

Activation of Plasminogen by Tissue

Astrup has shown that the lytic effect of cells on plasma clots is caused by the transformation of plasminogen in the fibrin substrate to plasmin by an activator associated with the tissue fragments. The tissue activator is strongly attached to structural proteins, especially in the microsome fraction.[2]

The total amount of enzyme obtainable after a complete reaction was shown to depend on the concentration of plasminogen as well as the concentration of the activator which reaction apparently proceeds to an equilibrium. Complete conversion of plasminogen to plasmin by tissue activator probably was not obtained. Astrup has verified the assumption that the activator removes reversibly a blocking substance from plasminogen converting it into plasmin. He has also suggested that the enzymic effect of trypsin on plasminogen suggests that the other activators of plasminogen act through an enzyme reaction and that discrepancies may be due to inhibitory agents.[14]

Activation of Plasminogen by Bacterial Filtrates

A substance is present in the culture filtrate from certain B-hemolytic streptococci which effects the lysis of clotted human plasmin and fibrinogen. Milstone found

that clots of highly purified human fibrinogen were not lysed by this factor, and that a "lytic factor" in human globulin in addition to the streptococcal factor was necessary for the production of fibrinolysis. Confirmative evidence presented by Remmart and Cohen seems to conclude that the transformation of plasminogen to plasmin was catalyzed by streptokinase which combined stoichiometrically with plasminogen.

Certain staphylococci produce a substance, staphylokinase, which effects the formation of a fibrinolytic and proteolytic enzyme in serum. Lysis of plasma clots has also been induced by cultures of gas gangrene anaerobes, the effect of which is probably due to proteases released by these organisms. Only streptococci and staphylococci were found to produce kinase substances.[14]

Fibrinolytic Activity of Urine

Urokinase is the first physiological plasminogen activator which has been isolated in highly purified form. Experiments reported confirm the fact that urokinase transforms plasminogen into plasmin by enzymic reaction. The enzymic nature of plasminogen activator formed in human blood by action of streptokinase, an activator precursor, has been proven.[9] Fibrinolytic systems, resembling those in blood, are found in most body secretions such as tears, saliva, and milk. The streptokinase-sensitive precursor is dominant in these cases, and only small amounts of free activator are found. In urine the reverse is true; the free activator is found in large amounts. This gives rise to the question of the identity of urokinase with the blood activator and possible transformation of the precursor in the kidneys. There is some experimental evidence that urokinase is different from acid labile blood activator and that its plasminogen activation is inhibited by certain esters.[9]

Spontaneous Fibrinolytic Activity

Fibrinolytic activity occurs spontaneously in blood and other body fluids. Urine normally contains a high activity, caused by an activator of plasminogen. Blood normally contains no (or very slight) activity except under certain conditions. In cases of sudden death of normal persons, states of anxiety, after adrenalin injection, and other conditions related to shock, a considerable activity can be found. Lytic activity may also develop in samples of blood during storage.[2]

Because of the strong fibrinolytic activity of blood in cases of sudden death, particularly when death is due to asphyxia (in which case high fibrinolytic activity is present) such blood has been useful in studies of spontaneous activity. The fibrinolytic activity produced by adrenaline or exercise disappears very rapidly from the blood and therefore interferes with the accuracy of the activator estimation.[2]

Some clarification of the identity of the agent responsible for spontaneous fibrinolytic activity was reached when it was found by means of the heated fibrin plate method that the lytic effect caused by spontaneously active human blood was due to an activator of plasminogen (only small amounts of plasmin being present). The blood activator is a very labile substance similar in this respect to the plasminogen activator found in urine and differing from the more stable tissue activator. Most results from post mortem studies attempting to identify the agents responsible for fibrinolytic activity point to the presence of two different components, an active enzyme, plasmin, and an activator of plasminogen. Recent studies on the streptokinase produced blood activator have shown the effect of this component on plasminogen to be catalytic.[2] The mechanism of spontaneous activation of plasminogen is autocatalytic and involves the release of a peptide moiety.[18] The blood activator is apparently formed by an inactive precursor in blood present in large amounts.

The activity which develops spontaneously during storage is not always an activator, but an enzyme proper.[2]

Inhibitory Agents and Significance of Fibrin

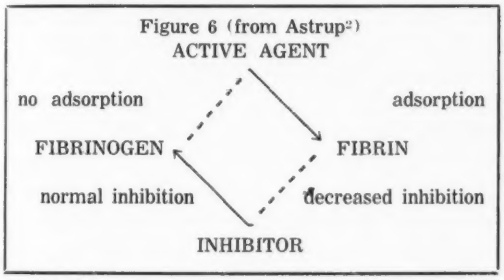
A trypsin inhibitor exists in serum which is heat labile, belongs to the serum albumin group, and is destroyed incompletely by chloroform. It is probably mainly responsible for a large part of the plasmin inhibiting effect of blood, namely that caused by labile antiplasmin.[2] Evidence has been obtained for inhibition of fibrinolysis in whole blood by immune gamma-globulin.[12]

It has also been found that isoelectrically precipitated serum globulin contains stable inhibitory agent. In separation by electrophoresis, it has been shown that the A_2 inhibitor globulin acts as a potent inhibitor of a plasminogen activator, while the A_1 inhibitor showed little activity.[16]

Various publications substantiate the presence of at least three plasmin inhibitors.

Fibrin is also involved in the inhibitory reaction. Fibrinolytic agents are adsorbed on fibrin which decrease the effect of inhibitory agents, thus requiring larger amounts of inhibitors to prevent clot lysis than for preventing the effect on fibrinogen. This explains the fact that fibrinolysis may occur under conditions where fibrinogen is not attacked. These reactions are very important in regulating the fibrinolytic system.[2] The interactions are diagrammed in the following table.

Figure 6 (from Astrup[2])



Inhibitory agents (antitryptic agents) are also present in the tissues; the albumin fraction of extracts of various organs shows antiplasmin activity, the highest level being in the liver and spleen. Urine also contains an inhibitory substance.

Heparin has been the subject of controversy. Astrup found it to inhibit fibrinolysis, dependent on proper pH and ionic strength of the fibrin substrate and plasmin sample.[2]

The Activator of Plasminogen in Blood
Streptokinase Proactivator-Activator System

Investigations performed recently have shown that streptokinase does not react directly with plasminogen, but indirectly through a proactivator-activator system. Furthermore, streptokinase reacts with proactivator in a reversible reaction: [14,15]

Streptokinase + proactivator $\rightleftharpoons$ activator + inactive component

Studies have shown that the activator is a proteolytic enzyme which catalyses the conversian of plasminogen to plasmin:[14]

$$\text{Plasminogen} \xrightarrow{\text{(activator plasminogenase)}} \text{plasmin}$$

Spontaneous Proactivator-Activator System

A proactivator-activator system is probably involved in the spontaneous formation of plasmin in vivo and vitro. Spontaneously lytic human blood has been found to contain a potent activator of plasminogen as have certain tissue extracts.[14]

Activator and Proactivator Estimation

Human blood contains large amounts of proactivator and streptokinase-activated preparations contain considerable quantities of an activator of plasminogen in addition to plasmin. Previous observations on the fibrinolytic activity of blood from living and dead human subjects, and of streptokinase-activated human preparations from blood have, for the most part, been concerned with the activator and not with plasmin.[15]

The existence of a proactivator-activator system is of primary significance for the concept of the development of fibrinolysis in blood. The splitting of fibrinogen and fibrin, produced by plasmin and activator, occurs at almost identical rates although in plasma only fibrin, but not fibrinogen, is split. The activator is strongly adsorbed to fibrin. Also in the blood is an anti-activator, the effect of which is markedly reduced in the presence of fibrin. Spontaneously lytic blood contains varying amounts of activator bound by antiactivator, but very little plasmin bound by antiplasmin. These observations indicate that activation of plasminogen takes place on the fibrin surface and the effect of the inhibitor against activator is reduced by its adsorption to fibrin.[11]

Stability of Activator and Proactivator

Recent studies of the activator and proactivator have shown that the activator activity may be destroyed at acid and alkaline reactions, but the proactivator is very stable, especially at acid pH. The effect of the activator is increased greatly by di-and tricarboxylic acids, but strong inhibition is produced by diaminomonocarboxylic acids and lysine ethyl esters.[14]

Methods for the Evaluation of Human Fibrinolysis

Increasing attention is being devoted to

pathologic fibrinolytic states and to therapeutic induction of this phenomenon in thromboembolic conditions. Of great prognostic value is the information which reveals the various states of activation which have not yet produced hemorrhage. Various methods have been used to demonstrate the presence of active fibrinolytic enzymes. These methods must fulfill the following requirements to be helpful and useful:[22]

1. The test must be sensitive enough to detect increased tendency to lysis even when there is no lysis of a spontaneously clotted blood during a 24 hour incubation period.
2. The results of the tests should be quickly available.
3. The test should be applicable in the presence of anticoagulants, particularly heparin.

Studies by Kurt von Kaulla and Richard Schultz (1957), have revealed that the combined application of thrombelastography with the test for euglobulin lysis time is superior to any other method of fibrinolysis determination (Table 1).

The euglobulin method of estimating fibrinolysis is based on the fact that the plasma euglobulins contain all of the factors essential for clotting and fibrinolysis, but the greatest part of antifibrinolysis is eliminated during preparation. The clotted fraction of human euglobulin invariably undergoes spontaneous fibrinolysis during incubation. The euglobulin lysis test should be performed immediately after venipuncture, because there is a loss of activity if the blood is stored.[22] It has been found that citrate consistently increases the fibrinolytic activity in isolated euglobulin fraction of human plasma. It is thought that citrate may be active in the transformation of proactivator to activator.[3]

Mechanism of Fibrinolysis in Blood

At the present time, it is thought that the development of fibrinolytic activity in blood is associated with the state of the vascular system. It is probable that any change causing increased permeability of the vascular endothelium and release of tissue components may cause an increase in the potential clotting tendency, leading in turn to increased potential fibrinolytic activity of the blood. A factor from tissue apparently combines with components in blood to form *plasminogenase* (activator of plasminogen). It is also probable that some plasminogenase is present in blood under normal conditions.

TABLE I (from Von Kaulla[22])

SUMMARY OF METHODS USED OR SUGGESTED FOR ESTIMATION OF CLINICALLY OBSERVED FIBRINOLYSIS

Principle	Applicable When Heparin Present	Detects Weak Fibrinolysis	Advantage	Remarks
1. Measurement of lysis time of spantaneously clotted blood	No	No	Simple	Quick results only with strong fibrinolysis
2. Measurement of lysis time of thrombin-clotted plasma	Yes, in low concentration	No	Simple, process easy to observe	More sensitive than #1
3. Measurement of lysis time of diluted thrombin clotted plasma	Yes, in low concentration	Yes	More sensitive than undiluted plasma	Less sensitive than undiluted with patients with induced lysis
4. Thrombelastographic recordings of blood or plasma lysis	No	To some extent	Permanent record of kinetics of lysis	Convenient, but expensive device required
5. Digestion zones on fibrin plates	Yes	No	No clot or fibrinogen required	A period of hours required for results. Fresh fibrin plates must be available at all times
6. Determination of undigested fibrin after 24 hours of incubation	Yes, in low concentration	Yes	Result in mg. of digested fibrin	Slow, requires 24 hours
7. Digestion of synthetic substrates	(?)	(?)	Titration results available in hrs.	Insensitive for spontaneous fibrinolytic human plasma
8. Euglobulin lysis	Yes	Yes	Results available in minutes to a few hours	No special equipment required

In fluid blood, all active substances circulate in a neutralized state, therefore there is no activation of plasminogen. Plasminogenase is bound by a specific inhibitor, anti-plasminogenase, and is strongly adsorbed onto fibrin from the fluid circulating blood. In this way, plasminogenase accumulates on the surface of fibrin deposits, and local, high, concentrations can be reached, although plasminogenase concentration in the blood is very low. The effect of inhibitors against activation and possibly against the effect of plasmin is reduced by the adsorption of activator and plasmin to the fibrin substrate. Dissociation of the plasminogenase-antiplasminogenase compound may occur on the adsorption of plasminogenase onto fibrin. The activation of plasminogen occurs on the fibrin surface and the fibrin is subsequently digested by the plasmin formed in the clot. With the lysis of the fibrin, plasmin and plasminogenase are released into the blood and probably neutralized there by their respective inhibitors. Simultaneously some deterioration of the rather labile components takes place.[14]

The following schemes illustrate equilibria and enzymic reactions in the presence of fibrin.[14]

Plasminogenase is adsorbed from circulating blood onto fibrin:

1. plasminogenase + fibrin⇌fibrin — plasminogenase and hence:
2. bound plasminogenase⇌plasminogenase + anti-plasminogenase

On the fibrin surface:

3. plasminogen $\xrightarrow{\text{plasminogenase}}$ plasmin and:
4. fibrin $\longrightarrow$ protein fragments

It is probable that fibrin deposits are continuously formed in various places in the organism also under physiological conditions, and that these are continuously and rapidly lysed.

Conclusion and Summary

From the year 1947, when the first scheme of fibrinolytic activity was proposed until today, great advances in the functional understanding of fibrinolysis have been achieved. Still little is known about the actual mechanisms in the human body which produce this process.

One important fact which must be noted is that the various reactions occurring under normal conditions in blood in the organism can be demonstrated only by inducing abnormal clot formations in the body. This makes it very difficult to obtain a precise knowledge of the state of the different components of the system in fluid blood in the vessels.

Plasmin is a fibrinolytic enzyme occurring in body fluids; its precursor is *plasminogen.* Plasmin is of vital importance to the organism because of its ability to dissolve blood clots anywhere in the body. Plasmin is thought to be an ideal blood clot dissolving agent which may be of tremendous therapeutic value in the treatment of thrombosis. Its use is dependent upon further research in order to supply a purified enzyme in sufficient quantities. The best method of measuring fibrinolytic activity in the organism yet devised is the euglobulin method in combination with thrombelastography.

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Cancer of the Prostrate

Proceedings of a weekly conference sponsored by the Medical and Surgical Services, VA Hospital and the Departments of Medicine and Surgery, University of Oklahoma School of Medicine and edited by Rene Menguy, M.D., Ph.D., and Mrs. Esther Compton.

DOCTOR MALMBORG: The patient, a 64-year-old negro laborer, was admitted to the Urology Service. He complained of increased urgency and frequency of urination during the past five months. These symptoms were associated with generalized weakness and had become progressively worse. Recently dependent edema had appeared. Two weeks prior to admission he developed recurrent and severe epistaxis. There was a 15 pound weight loss. The remainder of the history was not relevant. There was no history of back pain, easy bruising, or evidences of other bleeding tendencies.

On physical examination the patient appeared wasted, chronically ill and in moderate distress. During the interview he had a profuse epistaxis. A slight irregularity of the sternum was noticed. Both lung fields were normal. A soft blowing murmur of moderate intensity was heard at the apex of the heart. The liver edge was palpable 5 cms. below the right costal margin. On rectal examination the prostate was found to be three to four times larger than normal size. It was tender to palpation and its consistency was extremely hard and nodular. The motion of both knees was limited. These joints were also painful to palpation and similar tenderness was illicited over all the long bones. Generalized muscle weakness was apparent.

The following laboratory studies were considered pertinent. The hemoglobin ranged from 6.3 to 8.7 gms.% with a hematocrit ranging from 24% to 35%. The white blood count ranged between 10,000 and 18,000 with a normal differential. The platelets ranged from 16,000 to 175,000. Prothrombin time, bleeding and clotting times were normal. The blood urea nitrogen was 37 mgs.%. The alkaline phosphatase ranged from 13 to 39 Bodansky units. The acid phosphatase ranged from 2 to 3.4 units. The blood calcium and phosphorus were normal. The bromsulphalein test was normal. Several urinalyses showed innumerable white blood cells with a trace of albumin. Several urine cultures were negative. The stools were negative for occult blood. Bone marrow aspirations from the iliac crest and sternum were attempted but yielded only scanty marrow elements. X-ray films of the pelvis, both femurs, lumbar spine and ribs showed extensive lytic involvement suggesting bony metastases. An intravenous urogram failed to visualize the right kidney.

Because of the clinical and laboratory findings and despite failure to establish a positive histological diagnosis, a diagnosis of prostatic carcinoma with bony metastases was made. The patient was given estrogen and whole blood transfusions. The bleeding sites in the nasal mucosa were treated locally. Two weeks after treatment was begun dramatic improvement occurred. An orchidectomy is planned at a later date.

Doctor Kalbfleisch: There are several interesting facets to the problem presented by this patient. He was acutely ill with extensive replacement of his bone marrow by

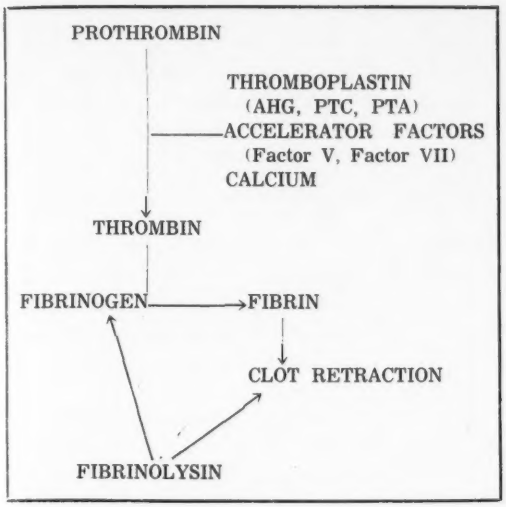

Fig. 1. Simplified scheme of the clotting mechanism.

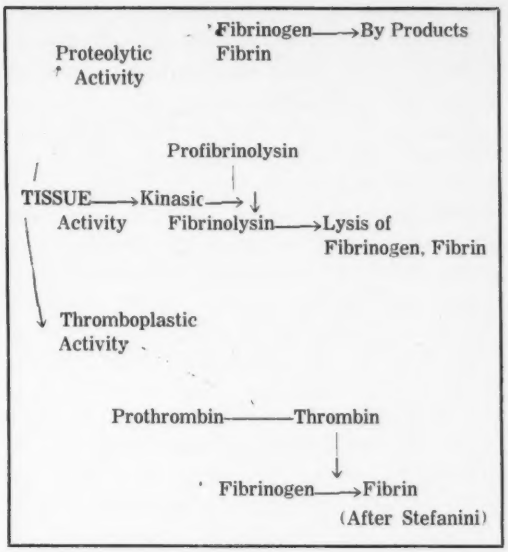

Fig. 2. Multiple potential mechanisms of fibrinogenopenia.

metastatic tumor. In addition he was anemic and had a hemorrhagic diathesis.

Figure 1 presents a simplified review of the coagulation mechanism. One mechanism of bleeding in carcinoma of the prostate is hypofibrinogenemia. The first cases of hypofibrinogenemia to be reported were patients with traumatic or hemorrhagic shock, with thermal burns and in patients with anaphylactic reactions. Subsequently, hypofibrinogenemia has been reported as a complication of severe liver disease, of obstetrical abnormalities and of lymphoma and various metastatic carcinomas. Jurgens in 1930 reported the first case of hypofibrinogenemia in carcinoma of the prostate. Since then numerous similar cases have been reported. Higgins in 1942 demonstrated in prostatic secretion a proteolytic enzyme which digested fibrin and fibrinogen. He considered this substance a true fibrinolysin unrelated to trypsin. Subsequently, circulating fibrinolysins have been demonstrated in the majority of cases of carcinoma of the prostate developing hypofibrinogenemia. Furthermore, fibrinolysins have been identified following transurethral resections and suprapubic prostatectomies. This usually results in severe and prolonged bleeding. A similar complication can occur after almost any type of prolonged operative procedure, particularly when numerous transfusions have been administered. Tagnon in 1953 demonstrat- prostatic tissue and also in malignant prostatic tissue both in the primary tumor and in the metastatic lesions.

Figure 2 outlines some of the mechanisms believed to be responsible for the production of fibrinolysins. A simple explanation for this phenomenon is that the prostate or the carcinomatous tissue merely secretes a proteolytic enzyme which acts as a fibrinolysin. Others believe that the hypofibrinogenemia is caused by an overactivation of the clotting mechanism thereby resulting in intravascular clotting. This stimulates the normal fibrinolytic mechanism which further depletes the level of circulating fibrinogen and dissipates prothrombin and accelerated factors. A suppression of synthesis of fibrogen by the liver has been postulated. However, autopsy studies do not support this hypothesis.

Obviously, it is important to recognize the development of hypofibrinogenemia. The diagnosis is quite simple. One needs only to observe the size of the clot for several hours. The blood sample drawn to determine the clotting time will suffice. If lysis is suspected, the sample should be sterile in order to distinguish circulating fibrinolysins from those occasionally introduced by bacterial contamination. Treatment of hypofibrinogenemia due to circulating fibrinolysins is simple. Unfortunately, results may be transient. The principle of treatment is admin-

istration of sufficient fibrinogen to overcome the lytic mechanism. Fresh, frozen plasma, whole blood or fibrinogen solution are equally effective.

Another mechanism of hemorrhagic diathesis in carcinoma of the prostate is replacement of bone marrow by tumor. Here thrombocytopenia may predominate and treatment consists in administration of fresh, whole blood in plastic bags or siliconized containers. Renal failure with resulting azotemia may also be associated with marrow failure, anemia and thrombocytopenia.

Finally, the clotting mechanism may be deranged as a result of the presence of abnormal proteins. In 1933, Wintrobe and Buell demonstrated a protein precipitated in the cold from the blood of a patient with multiple myeloma. This was studied further by Lerner and Watson who introduced the term cryoglobulin. Some degree of cryoglobulinemia is frequently present in any disease involving the reticuloendothelial system. This includes the leukemias, lymphoma, collagen disorders, cirrhosis and nephrotic syndrome. The clinical manifestations of cryoglobulinemia are varied but usually the symptoms suggest an atypical Raynaud's phenomenon. The patient may give a history of sensitivity to cold, epistaxis, bleeding from mucous membranes or other sites may be present. Cases with multiple thrombosis, both venous and arterial, have been reported. Other symptoms such as diarrhea, melena, dyspnea, cyanosis or abdominal pain may occur. Various amounts of cryoglobulins are common but only amounts greater than one gram per cent are considered to be significant as a cause of symptoms.

A related condition is macroglobulinemia described by Waldenstrom in 1944. Macroglobulins are of a very high molecular weight. They cannot be distinguished by electrophoresis from abnormal proteins present in patients with multiple myeloma. They can be distinguished only by the pattern found by ultracentrifugation. The clinical course is quite similar to that of multiple myeloma and by some is thought to be a variant of this disease. All of the abnormal proteins have been implicated in the development of bleeding abnormalities. It has been shown that on precipitation they carry with them some of the clotting factors. Deficiencies of Factor V, Factor VII, prothrombin and decreased platelets are the most common abnormalities reported. The fibrinogen level of our patient was determined initially because the presence of a fibrinolysin was suspected. Instead of being low it was unusually high and a dense plasma precipitate was noted after the specimen had been stored in the refrigerator over night. Following various studies this precipitate was found to be a cryofibrinogen. No cryoglobulins were present in the serum of our patient.

One case of cryofibrinogenemia has been reported in a patient with metastatic carcinoma of the lung and migratory thrombophlebitis. Recently another case was reported, thus accounting for our present knowledge of the chronic abnormalities associated with these cryoproteins. Figure 3 illustrates the rapid disappearance of the cryofibrinogen flocculin on warming. This is apparent in the second tube. The third tube demonstrates the clot which forms after the addition of thrombin to the washed and warmed cryofibrinogen. Fibrinogen de-

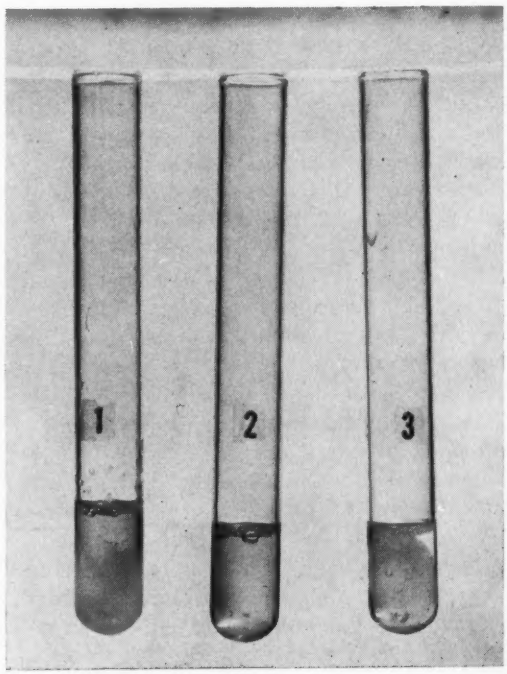

Fig. 3. Photograph of the cryofibrinogen in tube 1, the warmed clear plasma in tube 2, and the resulting clot upon the addition of thrombin in tube 3.

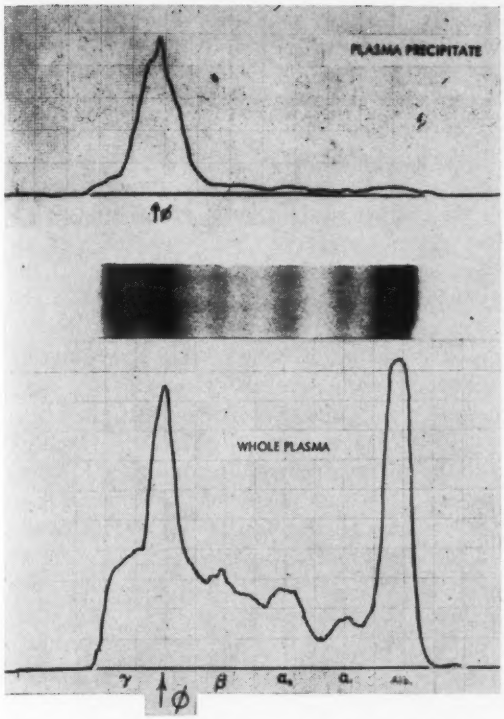

Fig. 4. Electrophoretic patterns of the whole plasma and washed, re-constituted cryofibrinogen.

terminations performed separately on the plasma precipitate and on the supernatant indicated that more than half of the total fibrinogen was precipitated by cooling to 40° C. Further clotting studies showed that prothrombin and accelerator factors were also precipitated along with the cryofibrinogen. Figure 4 shows the electrophoretic patterns of the whole plasma and cryofibrinogen.

This illustrates an interesting phenomenon whereby a hemorrhagic diathesis and increased intravascular clotting can be present simultaneously. Perhaps our patient is overcompensating by an overproduction of fibrinogen in an attempt to combat a fibrinolysin. It is conceivable that this resulted in the production of the abnormal fibrinogen. Since the patient has been receiving estrogens his fibrinogen level has progressively dropped from 2500 mg.% to 700 mg.%.

In summary there are three possible mechanisms which may produce a hemorrhagic diathesis in carcinoma of the prostate. First an active fibrinolysin elaborated either by carcinomatous tissue or produced by intravascular clotting may lead to serious bleeding. Secondly, a myelophthisic anemia or thrombocytopenia may result from marrow replacement by metastatic tissue or marrow depression by uremia. Lastly, abnormal proteins which on precipitation may deplete the blood of factors that are necessary for proper clotting may be present. It is important that these mechanisms be recognized since they are treated differently. The course of this patient suggests that estrogen therapy interferes with the mechanism responsible for the production of cryofibrinogens. In his case treatment resulted in a very satisfactory clinical remission of all his hemorrhagic manifestations.

Doctor West: First of all I would like to review the relationship between cancer of the prostate and the serum levels of alkaline phosphatase. There is some confusion regarding the significance of normal levels and of elevated levels of serum acid and alkaline phosphatase in cancer of the prostate. This patient had an elevated alkaline phosphatase level. This enzyme is produced by osteoblasts. When destruction and degeneration of bone occur, elevated levels of this enzyme are found. It is important to remember that alkaline phosphatase levels may be elevated also in patients with liver disease and that high levels are very likely to be found when the bile flow is obstructed. In normal children, who have continued osteoblastic activity, alkaline phosphatase levels are slightly higher than in adults. Therefore, it is obvious that elevations of the alkaline prosphatase levels are not at all specific for prostatic cancer.

On the other hand, the production of acid phosphatase is confined to the prostate. Evaluations of the serum levels of this enzyme are almost specified for cancer of the prostate. However, elevated acid phosphatase levels are in general found only in those cases of carcinoma of the prostate in which the lesion has extended beyond the capsule. Recently, it has been found that if one incubates acid phosphatase with 1-tartrate, the activity of the major portion of the acid phosphatase is eliminated. A small portion remains active and this fraction is more spe-

cifically associated with prostatic carcinoma than is the total acid phosphatase and is now referred to as "prostatic" acid phosphatase. This determination is not carried out at present in this institution. About one-third of the patients with demonstrable bone metastasis from carcinoma of the prostate have normal acid phosphatase levels when standard methods for determining levels of this enzyme are used. In such patients the "prostatic" fraction of acid phosphatase may be significantly elevated. Indeed it is probable that some patients with carcinoma of the prostate without invasion of the surrounding tissues may have elevated levels of this particular fraction. This suggests that it may be possible to diagnose certain cases of prostatic cancer before the occurrence of metastases. The reason for normal levels of total serum acid phosphatase in patients with obvious bone metastases is not clear. There is no obvious correlation between the level of the acid phosphatase and the histology of the tumor.

One should remember that slight elevations of acid phosphatase may occur in prostatitis and after prostatic massage.

Concerning treatment, it has been shown that the life expectancy has increased since the advent of estrogen and other types of hormonal treatment. Previously, about 10% of patients survived five years after diagnosis of carcinoma of the prostate with metastasis had been made. Following the advent of treatment with estrogens the incidence of five-year survivals rose to about 30%. It appears that the five-year survival rate has been increased further by the use of orchidectomy. In regard to the most satisfactory type of estrogen compound to use, the search for a tumor-inhibiting compound without feminizing effects is still being pursued. To date, no such compound has been found. However, there is some evidence suggesting that stilbestrol diphosphate may be more specific in inhibiting the prostatic tumor than stilbestrol. In point of fact, we do not know how stilbestrol or other estrogen compounds inhibit tumor growth. There are several possibilities. One is that the compound inhibits the secretion of androgens by the testicle and the adrenals. It is also possible that estrogens may have a direct action upon the tumor. This new diphosphate compound can be given in large doses without producing some of the undesirable side effects that are observed with stilbestrol. The use of stilbestrol diphosphate may be of benefit in patients who are experiencing pain in spite of orchidectomy. There is no evidence that large doses of estrogens are preferable to smaller ones. The evidence from clinics in which large doses have been used following failure of smaller doses is varied although some clinicians do believe that the administration of very large doses is helpful. Doctor Perry Hudson has used very large doses of stilbestrol (as high as several hundred milligrams daily), without any greater incidence of side effects than with the standard dose. Occasionally edema occurs in patients who are receiving stilbestrol, particularly patients who have a poor cardiovascular reserve. The compound "Tace" apparently does not produce edema. Tenderness of the breast is a common side effect with the administration of estrogen but usually is of minor degree when doses of five to ten milligrams per day are given. It is interesting that breast metastases from prostatic carcinoma have occurred in patients receiving estrogens whereas no cases of breast metastases have been reported in patients who have not received estrogens.

Adrenalectomy has been used in the treatment of prostatic carcinoma. This approach to the treatment is based on the fact that approximately two-thirds of the excreted 17 keto steroids are of adrenal origin. Theoretically it should be beneficial to remove the source of androgens even though these compounds are less potent than testosterone. However, the results of adrenalectomy have been in general disappointing and I believe that very few adrenalectomies are now being done for this condition. Also, it is known that hydrocortisone and hydrocortisone-like compounds will suppress completely adrenal androgen output. This approach has been used when other measures have failed to suppress the secretion of adrenal androgens. In general, the results have been poor, although it should be pointed out that the patients in whom this has

been tried have been patients with far advanced disease.

Recently we have been interested in the relationship between pituitary secretions and the growth of tumors. We selected prostatic carcinoma as being an interesting tumor to study because the effect of hypophysectomy in carcinoma of the breast had already been evaluated. We attempted to interrupt the pituitary function of six patients by injecting radioactive chromic phosphate into the pituitary gland. The patients were selected for this treatment because of their extremely poor condition. Every other form of treatment had been tried and life for them was no longer tenable since they had become narcotic addicts. They accepted the operation with the idea that they might not survive and that the treatment might not be effective. Unfortunately our results were such that we could not reach any clear-cut conclusion. We were able to follow three patients long enough to show that there may be some objective evidence of improvement following suppression of pituitary function. Two patients had temporary subjective remission and one patient had very good subjective and objective evidence of remission. We have since added two cases of other workers to this group of patients and have concluded that in about half of the cases of carcinoma of the prostate in whom exacerbations have occurred after orchidectomy, one can expect some temporary remission following complete suppression of pituitary function. The operation is a radical one and the mortality rate in patients who are severely ill is in the order of 25%. Ablation of pituitary function was attempted mainly with the idea of hoping to learn something about factors which control the growth of prostatic tumors. The rationale behind this was that there are several possible ways in which hypophysectomy may be beneficial. Adrenal function would be interrupted indirectly as well as remaining testicular function. It is also possible that the removal of the source of growth hormone might result in slower tumor growth.

Doctor Hammarsten: Is is correct, then, that you would no longer recommend hypophysectomy in a patient with prostatic carcinoma who has had orchidectomy and presents with symptomatic evidence of metastatic disease?

Doctor West: I would recommend it only in those very specific situations in which pain and narcotic addiction have made life unbearable for the patient. At this point, I would like to add that we produced a remission of four or five months duration in such a patient recently by simply cutting the pituitary stalk and placing a plastic plate over the sella to impair the development of collateral circulation to the gland. At autopsy approximately six months after the procedure the pituitary gland was almost completely destroyed. Apparently this was due to ischemic necrosis. The surgical procedure is much simpler than hypophysectomy. I would also like to add that the maintenance of a patient with suppression of pituitary function may be somewhat complicated.

Q. Would you discuss some of the methods of controlling a tumor locally?

Doctor West: The local control of the tumor is usually simple. Repeated transurethral resections can be done to relieve obstructive symptoms. Radioactive phosphate has been injected into the prostate. This method of treatment although not curative, seems to have some interesting possibilities.

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924 N.E. 13th, Oklahoma City, Oklahoma

ABSTRACTS

Vascular Lesion of Hereditary Hemorrhagic Telangiectasia*

ROBERT M. BIRD,** and WILLIAM E. JAQUES,*** Oklahoma City, Oklahoma

New England Journal of Medicine, **260:** 597, 1959

A clinical and pathological study on an elderly man with hereditary hemorrhagic telangiectasia is presented. The findings emphasize the fact that the telangiectasia involved large and small veins primarily. Arterial involvement was inconspicuous. All major organ systems were involved, and in each the venous defect was diffusely distributed. Clinical bleeding seemed to depend more on chance or accessibility of a tissue to trauma than on any predilection of the disease for a particular organ system. It is suggested that the cardiovascular disease resulted from the presence of increased numbers of arteriovenous communications.

*From the departments of Medicine and Pathology.
**Associate Professor of Medicine.
***Professor of Pathology.

Transplacental Infection of Fetuses of Rabbits with Herpes Simplex Virus

JOSEPH Z. BIEGELEISEN, Jr.,* and L. VERNON SCOTT.**

Proc. Soc. Exper. Biol. & Med., **97:** 411, 1958

Herpes simplex virus was isolated from the fetuses of five rabbits which had been inoculated on the scarified cornea with this infectious agent. The isolated virus was identified with specific immune serum. The possible role of this virus in fetal infections in human beings is discussed.

*Communicable Disease Center, Chamblee, Georgia.
**Professor of Microbiology.

Potential for Rehabilitation in Quadriplegic Teen-Agers

HERBERT KENT,* Oklahoma City

The Journal of the American Medical Association, **169:** 817, 1959

With an increasing accident rate, spinal cord injuries are becoming more prevalent and are now being seen in the teen-age group. Potential for rehabilitation is better in teen-agers than in adults. For achieving success, prompt comprehensive physical medicine and rehabilitation effort is necessary. Utilization of the modern techniques of rehabilitation, with meticulous attention to the skin and to the urinary and neuromuscular systems, makes a useful social and economic life feasible. It is possible not only to "break one's neck" today but to live with it moderately well.

*Associate Professor, Department of Physical Medicine.

Plantar Wart Treatment with Ultrasound

HERBERT KENT,* Oklahoma City

Archives of Physical Medicine and Rehabilitation, **40:** 15-18, 1959

Plantar warts respond to ultrasonic therapy, particularly when single and if treated early. In nine patients with such lesions, the results suggest that ultrasound is effective in more than 90 per cent of these cases. Those patients previously given x-ray and podophyllin therapy show delayed responses to ultrasound. Pain is relieved almost immediately followed by necrosis of the wart. Normal skin is unharmed by the technic suggested. Changes evoked in these warts suggest either a vascular, molecular, or viral effect.

*Associate Professor, Department of Physical Medicine.

Relative Potencies of Chlorpropamide and Tolbutamide in Man

KELLY M. WEST* and STANLEY R. McCAMPBELL.**

Annals of The New York Academy of Sciences **74:** 473-477, 1959

Chlorpropamide, 1 gm., produced significantly greater hypoglycemic responses in normal subjects 1 hour after ingestion than did tolbutamide, 1 gm. Chlorpropamide, 0.25 gm. and 0.5 gm., produced hypoglycemic responses in normal subjects 2 hours after ingestion comparable to doses of tolbutamide twice as great. Since it is unlikely that either drug has been appreciably metabolized or excreted 1 to 2 hours after ingestion, the relatively greater potency of chlorpropamide probably is not attributable entirely to its longer biological half time.

Seven normal subjects had serum chlorpropamide levels averaging 11.5 mg. per cent 2 hours after ingesting chlorpropamide, 1 gm., indicating that about one third of this dose was present in the plasma at that time.

Chlorpropamide, 0.5 gm., significantly increased the rate of disapearance of intravenously injected glucose. In one subject the effect of an intravenous injection of chlorpropamide, 0.5 gm., on the glucose disappearrance rate was strikingly similar to that of 1.8 units of insulin administered intravenously.

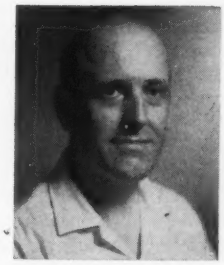
Two findings that have resulted from studies carried out since this report was drafted are of considerable interest in connection with the initial findings. We found that serum levels of chlorpropamide two hours after the drug was administered orally were much higher than serum levels of tolbutamide after comparable does of that drug. We found also that when chlorpropamide and tolbutamide were administered intravenously the hypoglycemic effects during the first hour were not significantly different.

*Instructor in Medicine, University of Oklahoma School of Medicine.
**Clinical Assistant in Medicine.

McDONNOLD

HUSEN

KAVAN



LESLIE

GATCHELL

Five New Faculty Appointments

Recent faculty appointments at the Medical Center include five instructors and clinical assistants in urology, ophthalmology, surgery and physical therapy.

L. C. Kavan, M.D., was named instructor in urology; Samuel B. Leslie, M.D., clinical assistant in ophthalmology; Frank Gaffney Gatchell, M.D., and George F. McDonnold, M.D., clinical assistants in surgery; and Luiese Husen, instructor in physical therapy.

Doctor Kavan, a 1942 graduate of Harvard Medical School, was a flight surgeon in the United States Air Force for three years and did general surgery and general practice at Schuyler, Nebraska, for ten years.

He then served residencies in urology at St. Vincent's Hospital, Toledo, Ohio, and the University of Texas Medical Branch at Galveston before coming to Oklahoma City.

Doctor Leslie, a 1942 graduate of the School of Medicine, returned to the Medical Center to take his residency in ophthalmology from 1956 to 1958.

Earlier, he served three years in the U. S. Army Medical Corps, finished a surgical residency at Western Oklahoma State Hospital and was in general medical and surgical practice at Okmulgee for nine years.

The two new appointees to the Department of Surgery are also graduates of the School of Medicine.

Doctor Gatchell, class of '43, interned at Indiana University Medical Center and was a resident in pathology, then general surgery at Wesley Hospital, Oklahoma City. He was a fellow at the University of Minnesota (Mayo Foundation) in 1951-52 and again from 1955-57. He was awarded a Science degree in surgery there. He returned here in 1957 to enter private practice. Doctor Gatchell's research has been in open heart surgery.

Doctor McDonnold, class of '52, interned at Wesley Hospital and completed a general surgery residency at the Oklahoma City Veterans Administration Hospital in 1957. He has participated in studies of post gastrectomy patients.

Miss Husen joined the School of Physical Therapy this summer after working 20 months as staff therapist at Children's Convalescent Hospital, Bethany. She attended Huron College and General Beadle State Teachers College in South Dakota before receiving her Bachelor of Science degree in physical therapy from the University of Oklahoma in 1957.

PRESIDENT'S LETTER

REFLECTIONS ON AN EFFORT— ONE MAN'S VIEWS

Basically the whole philosophy of a service type contract is objectionable and contrary to all the principles of economic freedom. As a Pioneer American Citizen, I could never accept such an infringement upon my liberties and such an abrogation of implied constitutional rights. However, although it may be unfortunate I am not a Pioneer American Citizen for I find myself in a greatly advantageous position contrasted to those courageous souls.

I acknowledge an indebtedness to the people collectively for my entire welfare; my education, the defense of my home, and the promise of intellectual freedom for my children. Regardless of how I try to shield my eyes I cannot escape the brilliant light of these facts.

Furthermore, I personally accept the following statements as valid and would gravely question the sincerity of any contemporary physician who did not acknowledge them to be true and factual:

(1) Our senior citizens require more medical service than any other segment of our population.

(2) Our senior citizens are less able to meet the economic and social demands of America's tremendously expanding economy which has been for the last 20 years of a definite inflationary nature.

(3) Self-respect and freedom from indebtedness are essential and indispensable morale factors among the citizens of any free nation. This is particularly the case among those older citizens who feel that their productivity and personal significance is rapidly waning. In order to maintain their support in any contest of political philosophies, it is important that they feel cared for and protected by the society in which they live.

In accepting these facts, I must support a medical-care plan which will offer something sound and good and new to our older citizens who find themselves in an environment which is threatening, insecure, and growing worse with each passing year. This may be social welfare talk but I would rather accept it at the individual level than at the governmental level, of professional rather than political design. If we adopt such a plan and make such an effort we can salvage at least the good feeling that comes with having tried. Certainly we may fail and there is a real possibility that we have come too late with too little but we must make the effort.

I believe there should be certain rigid safeguards in the development of any program involving a limited fee for virtually unlimited service. These safeguards are fairly well established in the proposed plan and pertain both to the selection of individual subscribers and the services to be rendered.

I also believe that such a policy should be subjected to cancellation on an individual or collective basis and there should be some provisions made for the gradual termination of the program in any area of the state. It should be agreed that any change in the income ceilings or benefit schedules must have the approval of the State Medical Association. Since we as physicians hope to be credited with the development of this program, I think we should make certain that we control it in fact rather than fancy. Such a program should never be compulsory and should be subject to constant public and professional scrutiny.

I would hate to have the responsibility for deciding this question myself. I sincerely feel that the decision of the Medical Association of this state will be the better choice and I will accept it without protest. If the Association rejects the plan, I think we should investigate the basis of the rejection and devote more serious study and additional time to developing a more acceptable program.

If there are enough of us who feel that we must do something then we have no alternative but to work until we develop that "something" into a popular and realistic medical care program for our Senior Citizens.

As I see it, this is vital missionary work in the field of true Christian principles. I gladly offer my time for whatever purpose it may serve.

MARK R. JOHNSON, M.D.,
Senior Citizen's Insurance Committee

The above letter was received two days before the Council meeting of Saturday, August 1. Although the action of the House of Delegates on August 2 negated some of the philosophy expressed, I feel that the above letter is worthy of being read by every member of the OSMA.

Eugene T. Baker M.D.
President

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Special Article

The State Agency Evaluates Hospital Planning*

PAUL A. SNELSON

Director, Division of Hospital Licensure and Construction, Oklahoma Department of Health, Oklahoma City, Oklahoma

The Hill-Burton hospital survey and construction program is now entering its 13th year of operation. While statistics alone do not reveal the full benefits of the hospitals and other facilities that have been built, they do convey quite an impressive story. Since its inception, the Hill-Burton Program in Oklahoma has completed 106 projects, providing 4,337 beds. In addition, 32 projects are currently in the planning or construction stage and these will provide 1,074 more beds.

A general summary of the Oklahoma program as of June 1, 1959, gives a total of 138 projects; 5,411 beds; at a total cost of $63,485,167.92, of which the Federal matching share is $24,059,382.59.

With such a record of accomplishments, it must be pretty obvious that somewhere, at sometime, there must have been considerable thought, research and planning given to developing the regulatory administrative framework under which all of the states would conduct the program at the state level. The initial planning group was known as the Commission on Hospital Care, composed of selected personnel from the Kellogg Foundation, the American Hospital Association and the U. S. Public Health Service. In a most efficient manner, this Commission produced within a two year period the basic structure on which the regulations and guidance procedures were later adopted by the Federal Hospital Council and the Surgeon General.

Even though the regulations governing the development of a state program were soundly conceived, as has been well demonstrated by a minimum of relatively minor changes during the past twelve years, some agencies have felt that they were not quite specific enough. It must be borne in mind, however, that these regulations and the procedures were designed to uniformly meet the needs of the majority of the states and territories, and that they were intentionally made as liberal as possible in order to per-

*Presented at Regional Conference on Development of Principles for Planning the Future Hospital System, held April 23-25, 1959 at New Orleans, and jointly sponsored by the American Hospital Association and the U. S. Public Health Service.

mit good plan development even in those areas having individual or peculiar characteristics. This liberality presented some administrative difficulties initially at the State Agency level, which, as a consequence prompted a general attitude of conservatism. I believe it can be truthfully stated, and without any criticism, that too many of the State Agencies were "following the book" too closely rather than using initiative and aggressive foresight.

There were other factors too, that had a distinct bearing on this conservative approach. Included were some yet to be fully explored such as the acceptance, utilization and support of the hospital in a manner that would assure the highest quality of care possible. Today we know that good individual and community health is a must in everybody's budget. But a decade ago this was pretty much an unknown quantity. Though there seems to be some grumbling about the ever-increasing cost of hospital and medical care, this becomes very secondary, or probably vanishes when the results of good care becomes a personal thing.

So, the economic situation does have a bearing on planning. We now feel reasonably sure that the public is not willing to compromise too much or too far on the quality of care.

Through such experiences and progressively better planning, most, if not all of the State Agencies began to feel more secure in their own abilities and recognized that the flexibility of the Federal regulations permitted the development of a sound State program.

Like so many resultants of progress, hospital programming, planning and construction is not a static situation. We cannot permit ourselves a momentary pause after having reached a plateau of evolution, for the plateau is only transitory because of the ever shifting character of hospital techniques and procedures, modern equipment, socio-economic changes, and advancing methods of medical procedures. So, in planning for the hospital of tomorrow it is highly imperative for those responsible for setting patterns for care to keep their ideas flexible, their minds alert to changing methods, and their thinking projected towards needs of the future. It behooves each State Agency, as a vital cog in translating these objectives into a practical and workable program to do its utmost to fulfill its obligation of service to the hospitals and the general public.

While the State Agencies have uniformly kept faith with the original intent of the Federal Act by achieving a distribution of beds and facilities, and giving prior consideration to those areas with least financial resources and areas of greatest relative need, the path was not exactly covered with dewey rose petals. The real problem was to fulfill these basic obligations while at the same time not to be neglectful of the intermediate and urban teaching facilities that form the backbone of a coordinated system of hospitals. Some problems present themselves that are still due consideration, particularly so with the advent of a renovation and modernization program. There has been a marked inconsistency in the reportable number of beds between various hospital agencies and the State Agency. Compound this discrepancy with other unsolved factors such as the lack of a uniform rated capacity procedure, and uniform criteria for classifying non-acceptable and replaceable beds, we began to realize that a good foundation is essential to good planning.

Pursuing this thinking another step, the planning agencies are faced with the problem of a new direction of planning and programming created by medical and technical advances, a change in the character of the patient load, demographic changes, and a closer integration of the various types of hospital and health facilities.

So, the challenge to the State Agencies is to gear their statewide programming to a shifting scene.

Rural and Community Problems

Generally speaking, there has been a marked degree of response in the small communities in providing themselves with hospital and health facilities. This interest has been the key to achieving a better distribution of beds and facilities. Paradoxically, it has become somewhat contagious to the extent that it has generated a new problem. Smaller communities which were never vis-

Special Article

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PAUL A. SNELSON

Director, Division of Hospital Licensure and Construction, Oklahoma Department of Health, Oklahoma City, Oklahoma

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Even though the regulations governing the development of a state program were soundly conceived, as has been well demonstrated by a minimum of relatively minor changes during the past twelve years, some agencies have felt that they were not quite specific enough. It must be borne in mind, however, that these regulations and the procedures were designed to uniformly meet the needs of the majority of the states and territories, and that they were intentionally made as liberal as possible in order to per-

*Presented at Regional Conference on Development of Principles for Planning the Future Hospital System, held April 23-25, 1959 at New Orleans, and jointly sponsored by the American Hospital Association and the U. S. Public Health Service.

mit good plan development even in those areas having individual or peculiar characteristics. This liberality presented some administrative difficulties initially at the State Agency level, which, as a consequence prompted a general attitude of conservatism. I believe it can be truthfully stated, and without any criticism, that too many of the State Agencies were "following the book" too closely rather than using initiative and aggressive foresight.

There were other factors too, that had a distinct bearing on this conservative approach. Included were some yet to be fully explored such as the acceptance, utilization and support of the hospital in a manner that would assure the highest quality of care possible. Today we know that good individual and community health is a must in everybody's budget. But a decade ago this was pretty much an unknown quantity. Though there seems to be some grumbling about the ever-increasing cost of hospital and medical care, this becomes very secondary, or probably vanishes when the results of good care becomes a personal thing.

So, the economic situation does have a bearing on planning. We now feel reasonably sure that the public is not willing to compromise too much or too far on the quality of care.

Through such experiences and progressively better planning, most, if not all of the State Agencies began to feel more secure in their own abilities and recognized that the flexibility of the Federal regulations permitted the development of a sound State program.

Like so many resultants of progress, hospital programming, planning and construction is not a static situation. We cannot permit ourselves a momentary pause after having reached a plateau of evolution, for the plateau is only transitory because of the ever shifting character of hospital techniques and procedures, modern equipment, socio-economic changes, and advancing methods of medical procedures. So, in planning for the hospital of tomorrow it is highly imperative for those responsible for setting patterns for care to keep their ideas flexible, their minds alert to changing methods, and their thinking projected towards needs of the future. It behooves each State Agency, as a vital cog in translating these objectives into a practical and workable program to do its utmost to fulfill its obligation of service to the hospitals and the general public.

While the State Agencies have uniformly kept faith with the original intent of the Federal Act by achieving a distribution of beds and facilities, and giving prior consideration to those areas with least financial resources and areas of greatest relative need, the path was not exactly covered with dewey rose petals. The real problem was to fulfill these basic obligations while at the same time not to be neglectful of the intermediate and urban teaching facilities that form the backbone of a coordinated system of hospitals. Some problems present themselves that are still due consideration, particularly so with the advent of a renovation and modernization program. There has been a marked inconsistency in the reportable number of beds between various hospital agencies and the State Agency. Compound this discrepancy with other unsolved factors such as the lack of a uniform rated capacity procedure, and uniform criteria for classifying non-acceptable and replaceable beds, we began to realize that a good foundation is essential to good planning.

Pursuing this thinking another step, the planning agencies are faced with the problem of a new direction of planning and programming created by medical and technical advances, a change in the character of the patient load, demographic changes, and a closer integration of the various types of hospital and health facilities.

So, the challenge to the State Agencies is to gear their statewide programming to a shifting scene.

Rural and Community Problems

Generally speaking, there has been a marked degree of response in the small communities in providing themselves with hospital and health facilities. This interest has been the key to achieving a better distribution of beds and facilities. Paradoxically, it has become somewhat contagious to the extent that it has generated a new problem. Smaller communities which were never vis-

ualized in the State Plan, for valid reasons to conform to the governing regulations, have likewise acquired a desire to construct a health facility, mostly for the purpose of holding or obtaining a doctor. While we fully appreciate the predicament of these smaller communities, interspersed smaller facilities would constitute a serious threat to the welfare of previously built facilities that have been established on a planned basis. Failure to obtain Hill-Burton assistance does not necessarily curb their ambition. In addition, not all such facilities are eligible projects. At the present, there is no effective control over facilities built outside the Hill-Burton Program, nor are we so sure that there should be because of its autonomous nature. Nevertheless, consideration must be given to the fact that various types of health facilities have been built and will continue to be built outside of the Hill-Burton Program. It would seem therefore that all groups and agencies concerned with any phase of health facilities have a common interest, as well as the responsibility for the encouragement of rational community planning.

Urbanization and Urban Planning

The greatest impact of facilities constructed outside the Hill-Burton Program has been in the urban areas. Hospital usage has become, to some extent, a competitive situation. This in turn has led to competition in construction. Through experience, the value of a well-developed program, embracing long-range as well as immediate project planning has become a considered necessity by both the sponsor and the State Agency. Difficulties arise, however, where there are multiple facilities in an urban area, each of which is solely concerned with its own individual destiny rather than considering its neighbor, or its perspective as a community facility.

We know there has been interest manifested by higher hospital authorities in total metropolitan planning. While it may appear to be higher strata thinking, actually it is an existing reality. Practically all other types of metropolitan planning is a result of coordinated effort. Why shouldn't this be true of hospitals and all of the related health facilities? Why should there be costly duplication of services and facilities with all of its attendant problems? Would it not be far better if all hospitals within the hospital service area took the initiative collectively in developing a long-range construction program that would be geared to the expected economic and industrial growth of the area?

We find little opposition to the principle that a total urban survey would be of invaluable assistance to eligible and non-eligible hospitals alike. The big question is how, and by whom is the job to be done. I regret that we have not, as yet, found the right answer in Oklahoma. If this problem is prevalent in other states perhaps further exploration on ways and means of metropolitan planning is indicated on a national scale.

Modernization and Replacement

Another area of State Agency planning problems is concerned with modernization, expansion and replacement of existing facilities, particularly those hospitals that make a greater contribution in teaching responsibilities, and in elevating standards of care. Of course we know that our basic problem is priorities, but we also have other problems that may be of equal or greater importance in making this phase operable.

From a program and design standpoint, a modernization or expansion project is the most difficult to work out. Creating a highly efficient and operable facility out of an outmoded, sub-standard structure is a real challenge. If approached properly, an extensive physical survey of the existing facility is basically essential. This requires both skill and time, either of which is a commodity that State Agencies have little of in terms of quantity. Regardless of the amount of assistance available from the sponsor, if and when a modernization phase becomes a major function of Hill-Burton, there will undoubtedly be an additional burden thrust upon an already overtaxed State Agency office. It is quite apparent, therefore, that in addition to the vast amount of funds needed to implement the program, somehow the State Agency must be in a position to accept its responsibility.

Additions to existing facilities have already necessitated a modest amount of modernization, however, the need extends far beyond that point. Practically all of our older hospitals were constructed before there were guidance standards to follow. Bringing these facilities up to minimum construction standards has, in many instances, been costly and still presents difficulties in operation.

Also, there have been some replacement activities within the Hill-Burton Program. Generally this was brought about by voluntary closure of one or more sub-standard facilities in a community upon assurance of obtaining a new community-type facility.

While this limited experience will be an invaluable tool in more extensive planning, there still remains the vast problem of capital replacement, particularly in the older sections of the country where some of our traditionally fine hospitals are located.

Mr. George Bugbee, President, Health Information Foundation, New York City, set the stage most clearly and capably on Urban Planning at the March, 1959, Conference of the Surgeon General with the State and Territorial Health Officers. Following a brief background of statistics, he stated, "Such planning certainly bears on any change in priorities; in fact, only with adequate planning can priorities be intelligently operative." Reference was also made to the stratospheric cost of replacement, and the financial obstacles. Because of the difficulty of establishing a satisfactory priority schedule for replacement projects under the framework of the Hill-Burton Act as it now stands, his suggestion on an urbal renewal feature is intriguing and possibly the solution to the problem. But, as he aptly points out, "A master plan is needed in every city."

So, once again we see the importance of coordinating planning. Only this time the task has reached new proportions. In addition to estimating the bed need for a given area at a given distant time, the distribution, character and type of facilities must be given proper consideration.

Integration and Health Facilities

Prior to 1954 the duties of the State Agency were relatively simple, although not necessarily simple in execution. Until that time we were only concerned with five principle categories of facilities. With little or no interest in Chronic Disease hospitals, there remained only four categories of primary concern, each of which was most usually in a sphere to itself. And with the major activity centered on intermediate and community acute general hospitals in most states, there was little necessity to be concerned with multiple and varied health facilities, except for an occasional health center.

With the advent of the Medical Facilities Act of 1954 comprehensive community and area planning warranted a new emphasis. With new developments in the Welfare field, and a properly directed and growing interest in total care facilities by the hospital people, advance planning has taken on an entirely new look. For example, general hospitals are seriously considering the feasibility of operating a nursing home as an adjunct facility. In fact, a number of such combination or supplementary projects have already been approved. While the future of this new function is difficult to predict, such facilities operated by or having a close working relationship with one or more community general hospitals, seemingly would create a desirable stimulus of increased quality of care, even if such instances were limited to sporadic pilot projects. It is quite possible however, that the hospital interest in the nursing home field may lead into new horizons now that welfare benefits are approvable for hospitalization.

Until now the main interest of existing general hospitals has been in the construction of additional beds and modernizing their outmoded physical facilities. This is quite understandable. But doctors and hospitals alike are seeking new or expanded services such as physical medicine, long-term care, progressive patient care, teletherapy, modern diagnostic units and outpatient departments. When these elements will have been substantially provided, they will have all but closed the gap on total care from home, to hospital, to long-term care, to rehabilitation and return to the home where the cycle began.

Admittedly, it is not as simple as it sounds. In fact it may occur only in the hospital of tomorrow, which in turn may not be known except for isolated instances in our generation for there are three major obstacles to its fulfillment. The most dominant is money with which to build them. Then too, it would be tragic error if these facilities developed without benefit of sound advance planning. Lastly and probably the first to be overcome will be the problem of payment for care. Better care and broader services can only lead to one direction and that is higher costs. There is a great likelihood however that the base of hospitalization insurance benefits will be broadened in response to public demand.

Much has been written and even more has been said about the recent advances in concepts of care that have a decided influence on community planning, urban planning, statewide planning and even the individual project design. More is yet to be heard since it is evident that we are on the threshold of a new era in hospital utilization. To meet and assume the expected leadership in this almost revolutionary and complex challenge, state level planning agencies are compelled to adjust their programs in relationship to the new concept of care by:

1. Continual encouragement of thorough community planning,
2. Encouragement of urban planning,
3. Coordinate statewide planning to assure a proper balance of facilities concerned with the various stages and types of illness and debilitation,
4. Reinforcing existing personnel to permit a broader and more accelerated study of the many aspects bearing on total care, and
5. Providing technical assistance and guidance on modernization projects.

In preparing this paper, an effort was made to keep in mind the major problems of a representative type state agency so that a cross section perspective could be obtained. While there are some agencies more fortunate than others in regard to staffing and budgeting funds, I think most will agree that the foregoing is an accurate general analysis. But regardless of personnel, funds or variations in scope of activities, all of the state program directors are sincere and most willing to produce to the utmost of their abilities, and will continue to do so.

Plan to Attend the

Twenty-Ninth Annual Fall Conference

OKLAHOMA CITY CLINICAL SOCIETY

Biltmore Hotel **Oklahoma City**

October 26, 27, 28, 1959

Medical News

First National Conference on Medical Aspects of Sports Injuries to Be Held in Dallas

The first national Conference on the Medical Aspects of Sports, sponsored by the American Medical Association, will be held Nov. 30 in Dallas, Texas.

The one-day meeting is for college and high school athletic directors, coaches, trainers, and doctors. "These are the individuals who are charged with responsibility for the health of athletes," said Doctor Allan J. Ryan, Meriden, Conn., chairman of the AMA Committee on the Medical Aspects of Sports.

Doctor Ryan pointed out that the conference will deal with a wide variety of medical subjects which affect the athlete's total well being. These include training, conditioning, prevention and treatment of injuries, and the physiology of exercise.

Highlights of the program will be panel discussions of on-field responsibilities of the team physician and prevention of head injuries in athletics. Other discussions will concern amphetamines and the attitudes of athletes; a medical program for high school football; exercise and the oxygen debt; the biodynamic potential of the American male; exercise and the kidney, and the pathology of trauma.

The national Conference on the Medical Aspects of Sports will precede the clinical meeting of the AMA, which begins Dec. 1 in Dallas and continues for four days.

Alpha Omega Alpha Schedules Fall Lecture

The Alpha Omega Alpha annual Fall lecture will be held this year on October 6th, 1959 at 8:00 p.m. in the auditorium of the University of Oklahoma School of Medicine. Guest speaker for the occasion will be Sir George Pickering, Reguis, Professor of Medicine, Oxford University, England.

ACP Outlines Autumn-Winter Postgraduate Courses

The American College of Physicians has outlined their Autumn-Winter Postgraduate courses for 1959-1960. Seven different courses will be presented in as many cities. In encouraging postgraduate study, the College extends this service to its Fellows and Associates. Where the facilities are available, these courses will be open to non-members with adequate preliminary training.

First of the courses will be "Selected Topics in Internal Medicine" to be held September 28-October 2, 1959 at Georgetown University School of Medicine, Washington, D. C. Subject matter for this course will range from newer applications of the oldest diagnostic technique—auscultation of the heart—to the newest in diagnosis—metabolic disorders.

"Selected Subjects in Internal Medicine" will be the topic of Course No. 2, which will be held October 5-7, 1959 at the University of Buffalo School of Medicine, Buffalo, New York. This three-day course was designed to emphasize recent advances in selected aspects of medicine in which current investigations contributed.

The third course, "The Science of Internal Medicine," will be held November 2-6, 1959 at the State University of New York Upstate Medical Center, Syracuse, New York. Designed to review some of the scientific background of recent advances of disease state, this course consists of animal demonstrations of the nature of arrhythmias, panels and lectures.

On November 20 through December 4, 1959, Tulane University School of Medicine, New Orleans, Louisiana, will host the fourth postgraduate course on "Clinical Cardiology." The course will acquaint the participants with new developments in the field of cardiovascular disease.

Site of the fifth course will be Cornell University Medical College and the Hospital for Special Surgery, New York City, from

January 11 to the 15th, 1960. Topic for this meeting will be "Current Concepts of the Rheumatic Diseases—Their Recognition and Management." The aim of this course is to present current information regarding the composition of healthy connective tissue, its physiology and metabolism, and to critically discuss the nature, the methods of recognition and the management of the various diseases of connective tissue—the rheumatic diseases.

"Internal Medicine — Selected Subjects" will be the material discussed at the sixth course which will be held at the Henry Ford Hospital, Detroit, Michigan on January 25 through the 29th, 1960. Selected current developments in the field of internal medicine will be presented to the internist in this course.

The final program will be held at Mount Sinai Hospital, New York City on February 8-12, 1960. "Recent Advances in Metabolic Diseases" will be the subject for this five-day presentation which deals with areas of substantial progress in recent years and on developments which have implications relating directly to pathogenesis, diagnosis and management of disorders of metabolism.

The College, believing that its Postgraduate Course Program should be essentially self-supporting, for the first time in the past twenty years, announces new matriculation fees—$60.00 per week for members of the College and $80.00 per week for non-members.

All registrations must be made through the Executive Offices of the College, 4200 Pine Street, Philadelphia 4, Pennsylvania.

Course in Postgraduate Gastroenterology

The American College of Gastroenterology announces that its Annual Course in Postgraduate Gastroenterology will be given at The Biltmore in Los Angeles, California, on September 24, 25, 26, 1959.

There will be a clinical session at the College of Medical Evangelists and this year, in addition to individual papers, there will be several panel discussions of interest.

For further information and enrollment write to the American College of Gastroenterology, 33 West 60th Street, New York 23, N. Y.

Program Completed for OAGP And Medical Center Symposium

Details have been completed for the symposium on Medical and Surgical Problems in the Senior Citizen which will be conducted by the Oklahoma Academy of General Practice and the University of Oklahoma Medical Center, Friday, October 2, at the Skirvin Tower Hotel in Oklahoma City.

PROGRAM

MORNING SESSION—Persian Room

Moderator: ROBERT A. SCHNEIDER, M.D., Associate Professor of Medicine and Psychiatry, University of Oklahoma Medical Center, Oklahoma City, Oklahoma.

8:30 Registration—All Day

9:30-10:10 Prediction of Myocardial Infarction—John W. Gofman, M.D., Professor of Medical Physics, Donner Laboratory, University of California, Clinical Instructor in Medicine, University of California Medical School, Berkeley, California

10:10-10:50 Oral Control of Diabetes Mellitus — The When and Why—Leo P. Krall, M.D., Senior Staff, Joslin Clinic and New England Deaconess Hospital, Consultant, U. S. Public Health Service, Boston, Massachusetts

10:50-11:30 What Answers Have Steroids for Problems Peculiar to the Aged?—Walter L. Arons, M.D., Chief of Endocrine Clinic, Stanford University School of Medicine, Stanford, California

11:30-12:00 Questions and Panel Discussion

12:30- 2:00 Luncheon for physicians and wives—Persian Room
Chairman—Roger Reid, M.D., State President, Oklahoma Academy of General Practice, Ardmore, Oklahoma
Speaker—"People Who Live in Glass Houses Shouldn't"—Leo M. Wachtel, M.D., President-Elect, Florida Medical Association, Member, Commission on Hospitals, American Academy of General Practice, Jacksonville, Florida

AFTERNOON SESSION—Persian Room

Moderator: JOHN A. SCHILLING, M.D., Professor and Head, Department of Surgery, University of Oklahoma Medical Center, Oklahoma City, Oklahoma

2:30-3:10 Down-to-Earth Care of the Stroke Patient —Donald A. Covalt, M.D., Associate Director, Institute of Physical Medicine and Rehabilitation, New York University—Bellevue Medical Center, New York, New York

3:10-3:50 Evaluation for Operability of the Older Patient—William Requarth, M.D., Clinical Assistant Professor of Surgery, Uni-

versity of Illinois College of Medicine, Chicago, Illinois

3:50-4:05 Recess—Coffee

4:05-4:45 Gastrointestinal Hemorrhage of the Aged —Bentley P. Colcock, M.D., Member of the Surgical Staff, Lahey Clinic, Boston, Massachusetts

4:45-5:15 Questions and Panel Discussion

5:45-6:45 Reception—Persian Room

The symposium is acceptable for seven hours of Category 1 Credit by the American Academy of General Practice. No fee is required for attendance at scientific sessions, luncheon or reception. All physicians and their wives are urged to attend this symposium which is made possible by a grant from and with the cooperation of Lederle Laboratories.

Oklahoma City Clinical Society Announces Program

Highlighting the Twenty-Ninth Annual Fall Conference of the Oklahoma City Clinical Society will be the appearance of sixteen prominent guest lecturers. Features of the meeting, which will be held in the Biltmore Hotel, October 26, 27, 28, 1959, include: general assemblies, clinical pathologic conference, round-table luncheons, specialty lectures, dinner meetings and commercial exhibits. The complete program follows:

MONDAY, OCTOBER 26, 1959

General Assembly Lectures

9:00 a.m.—MEDICAL THERAPY IN HYPERTENSION
Daniel W. Lewis, M.D.

9:30 a.m.—THE MANAGEMENT OF PROBLEMS RESULTING FROM DEGENERATIVE CHANGES OF THE SPINE AND HIPS IN OLDER PATIENTS
H. Relton McCarroll, M.D.

10:00 a.m.—VISIT THE EXHIBITS

10:30 a.m.—ASEPTIC MENINGITIS
Frederick C. Robbins, M.D.

11:00 a.m.—OBSTETRIC SHOCK
Roy T. Parker, M.D.

11:30 a.m.—ABDOMINAL TRAUMA
Robert M. Moore, M.D.

Specialty Lectures

9:30 a.m.—AN EVALUATION OF CERVICAL ATYPIAS IN HUMAN AND EXPERIMENTAL CERVICAL CANCER
Wm. M. Christopherson, M.D.

9:30 a.m.—VESICAL NEOPLASM: TREATMENT AND PROGNOSIS
Gershom J. Thompson, M.D.

12:15 p.m.—LUNCHEONS—ROUND TABLE DISCUSSION

General Assembly Lectures

2:00 p.m.—MANAGEMENT OF PELVIC RELAXATIONS
Robert H. Barter, M.D.

2:30 p.m.—COMMON FRACTURES WHICH MAY BE MANAGED IN OFFICE PRACTICE
H. Relton McCarroll, M.D.

3:00 p.m.—VISIT THE EXHIBITS

3:30 p.m.—DEVELOPMENT OF VISION IN THE CROSSEYED CHILD
George M. Haik, M.D.

4:00 p.m.—LOW DOSAGE OBSTETRICAL RADIOGRAPHY
John A. Campbell, M.D.

4:30 p.m.—THE CAUSES OF HEMATURIA
Gershom J. Thompson, M.D.

Specialty Lectures

2:30 p.m.—HISTORIC BACKGROUND OF GASTRECTOMY FOR DUODENAL ULCER
Robert M. Moore, M.D.

2:30 p.m.—IMMUNIZATION AGAINST VIRUS DISEASES
Frederick C. Robbins, M.D.

7:00 p.m.—BANQUET — SPONSORED BY THE OKLAHOMA COUNTY MEDICAL SOCIETY
Guest Speaker—Mr. Chester H. Lauck ("Lum" of the Lum and Abner radio team)
Houston, Texas

TUESDAY, OCTOBER 27, 1959

General Assembly Lectures

9:00 a.m.—SOME INTERESTING MASSES IN THE FLANK
Gershom J. Thompson, M.D.

9:30 a.m.—SAVING THE RECTUM
Rupert B. Turnbull, M.D.

10:00 a.m.—VISIT THE EXHIBITS

10:30 a.m. to 12:00 noon—CLINICAL PATHOLOGIC CONFERENCE
William M. Christopherson, M.D.
Daniel W. Lewis, M.D.
Rupert B. Turnbull, M.D.

Specialty Lectures

9:30 a.m.—RHINOPLASTY
Sam H. Sanders, M.D.

9:30 a.m.—THE DEVELOPMENT AND MANAGEMENT OF ACUTE RENAL FAILURE IN THE OBSTETRIC PATIENT
Roy T. Parker, M.D.

12:15 p.m.—LUNCHEONS—ROUND TABLE DISCUSSION

General Assembly Lectures

2:00 p.m.—SKIN MANIFESTATIONS OF INTERNAL DISEASES
John H. Talbott, M.D.

2:30 p.m.—TONSIL AND ADENOID PROBLEM
Sam H. Sanders, M.D.

3:00 p.m.—VISIT THE EXHIBITS

3:30 p.m.—MANAGEMENT OF THE ANESTHESIA FOR TONSILECTOMY AND ADENOIDECTOMY
M. Digby Leigh, M.D.

4:00 p.m.—NEWER RESPIRATORY VIRUSES
Frederick C. Robbins, M.D.

4:30 p.m.—CLINICAL APPLICATIONS OF CINERADIOGRAPHY
John A. Campbell, M.D.

Specialty Lectures

2:30 p.m.—STAPHYLOCOCCAL INFECTIONS IN THE HOSPITAL PATIENT
Rupert B. Turnbull, M.D.

2:30 p.m.—THE MANAGEMENT OF CONGENITAL DISLOCATION OF THE HIP IN INFANCY AND YOUNG CHILDREN
H. Relton McCarroll, M.D.

6:30 p.m.—SOCIAL HOUR—SPECIALTY GROUP DINNERS

WEDNESDAY, OCTOBER 28, 1959

General Assembly Lectures

9:00 a.m.—GOUT AND BLOOD DYSCRASIAS
John H. Talbott, M.D.

9:30 a.m.—PRESENT THOUGHTS ON GLAUCOMA OF INTEREST TO THE GENERAL PHYSICIAN
George M. Haik, M.D.

10:00 a.m.—VISIT THE EXHIBITS

10:30 a.m.—CURRENT CONCEPTS OF OVARIAN TUMORS
Robert H. Barter, M.D.

11:00 a.m.—THE TREATMENT OF FUNGOUS DISEASES WITH GRISEOFULVIN
J. Walter Wilson, M.D.

11:30 a.m.—IRREGULAR, EXCESSIVE AND PROLONGED BLEEDING
Roy T. Parker, M.D.

Specialty Lectures

9:30 a.m.—TWILIGHT ZONES IN CARDIOLOGY
Daniel W. Lewis, M.D.

9:30 a.m.—THE DELUSION OF PARASITOSIS
J. Walter Wilson, M.D.

12:15 p.m.—LUNCHEONS—ROUND TABLE DISCUSSION

General Assembly Lectures

2:00 p.m.—A PROGRAM FOR THE MASS DETECTION OF ASYMPTOMATIC CERVICAL CANCER
Wm. M. Christopherson, M.D.

2:30 p.m.—INTESTINAL OBSTRUCTION
Robert M. Moore, M.D.

3:00 p.m.—VISIT THE EXHIBITS

3:30 p.m.—SURGICAL SKIN PLANNING FOR ACNE SCARS
J. Walter Wilson, M.D.

4:00 p.m.—HIDDEN COMPLICATIONS FOLLOWING ANTIBIOTIC THERAPY AND MIDDLE EAR DISEASE
Sam H. Sanders, M.D.

4:30 p.m.—MANAGEMENT OF EMERGENCIES
M. Digby Leigh, M.D.

Specialty Lectures

2:30 p.m.—GENERAL PROBLEMS OF GOUT AND GOUTY ARTHRITIS
John H. Talbott, M.D.

2:30 p.m.—CLOSURE OF THE INCOMPETENT CERVIX DURING PREGNANCY
Robert H. Barter, M.D.

7:00 p.m.—ANNUAL DINNER DANCE — SPONSORED BY THE OKLAHOMA CITY CHAMBER OF COMMERCE
Persian Room—Skirvin Tower Hotel

Registration fee for the Conference which is acceptable for 18 hours credit (Category 1) by the American Academy of General Practice, is $20.00 which includes all features.

AMA Disavows Implied Endorsement

The American Medical Association has recorded an official protest with the Federal Trade Commission against a recent advertisement of the Vitasafe Corporation, a New York City mail-order vitamin house.

The Vitasafe ad, currently appearing in newspapers and magazines, features a premium give-away offering "The Official AMA Book of Health" plus a 30-day supply of "High-Potency capsules." The "Book of Health" which is currently being offered is actually a collection of articles from Today's Health, the consumer magazine of the AMA.

According to Ernest B. Howard, M.D., AMA assistant executive vice-president, "In our opinion the Vitasafe Corporation has attempted to imply in this advertisement the endorsement of the AMA of one of their products. The association has not approved this advertisement copy nor has it at any time approved or endorsed in any way the product or products of this organization."

Coming Meetings

UNIVERSITY OF OKLAHOMA MEDICAL CENTER
POSTGRADUATE PROGRAM*
Individual Postgraduate Courses

BASIC ELECTROCARDIOGRAPHY — February 29 through March 5.

OPTHALMOLOGY-OTOLARYNGOLOGY SYMPOSIUM—March 3 and 4.

OBSTETRICS-GYNECOLOGY SYMPOSIUM—March 5.

ADRENAL STEROIDS—March 24, 25, and 26. (Third Oklahoma Colloquy on advances in Medicine.)

ORTHOPEDIC SYMPOSIUM—April 22 and 23 (this date is tentative).

CARCINOMA OF THE SKIN—May 6 and 7. (Sixth Annual Combined Surgery, Radiology, Pathology Symposium.)

OKLAHOMA ASSSOCIATION OF HOUSE STAFF PHYSICIANS—Date to be determined.

SERIAL POSTGRADUATE COURSE
Postgraduate Division
Oklahoma City, Oklahoma
1959-1960

Wednesday Short Courses
3:30 to 8:30 p.m.

Sept. 9	Renal Diseases Guest Lecturer: Maurice B. Strauss, M.D. Boston, Massachusetts
Oct. 14	Endocrine Disorders
Nov. 11	Surgery
Dec. 9	Renal Diseases in Childhood
Jan. 13	Carl Puckett Memorial Lecture and Infectious Diseases Symposium
Mar. 9	C. B. Taylor Lectureship and Urology Symposium—Guest Lecturer to be announced
Apr. 13	Anesthesia for the Part-time Anesthetist
May 11	Neurological Diseases in Childhood
June 8	Surgery

*Further information may be obtained from the Office of Postgraduate Education, University of Oklahoma School of Medicine, 801 N.E. 13th Street, Oklahoma City, Oklahoma.

OKLAHOMA ACADEMY OF GENERAL PRACTICE SYMPOSIUM
October 2, 1959 **Skirvin Hotel**
Oklahoma City

The Oklahoma Academy of General Practice, the University of Oklahoma Medical Center and Lederle Laboratories will present a Symposium on "Medical and Surgical Problems in the Senior Citizen," to be held October 2, 1959 in the Skirvin Hotel, Oklahoma City. Further information may be obtained by writing to Nolen Armstrong, M.D., President, Oklahoma City District, A.A.G.P., 2925 N.W. 50th, Oklahoma City, Oklahoma.

6th ANNUAL CANCER SYMPOSIUM
December 5, 1959 **Skirvin Hotel**
Oklahoma City

The 6th Annual Cancer Symposium, American Cancer Society, Oklahoma Division, will be held at the Skirvin Hotel, December 5, 1959. Subject of the meeting will be "Cancer of the Breast."

THE UNIVERSITY OF TEXAS
POSTGRADUATE SCHOOL OF MEDICINE
Course in Cardiology
December 7-11, 1959 **Texas Medical Center**
Houston, Texas

The University of Texas Postgraduate School of Medicine has announced the James J. and Una Truitt Lecturer for the year 1959 will be Paul Wood, O.B.E., M.D. (Melbourne), F.R.C.P. (London). The guest lecturer from London will present a course in cardiology at the Texas Medical Center December 7-11.

For further information write to Office of the Dean, The University of Texas Postgraduate School of Medicine, 410 Jesse Jones Library Building, Texas Medical Center, Houston 25, Texas.

24th Annual Congress
INTERNATIONAL COLLEGE OF SURGEONS
September 13-17, 1959 **Chicago**

The 24th Annual Congress of the North American Federation, International College of Surgeons, will be held in Chicago, September 13-17. The federation is composed of the United States, Canadian, Mexican, and Central American Sections. For information, write to the Secretariat, International College of Surgeons, 1516 Lake Shore Drive, Chicago 10.

INTERNATIONAL COLLEGE OF SURGEONS
November 16, 17, 18, 1959 **Hot Springs, Virginia**

The Mid-Atlantic Meeting of the International College of Surgeons will be held at the Homestead Hotel, Hot Springs, Virginia on November 16, 17, 18, 1959. For further details contact: E. G. Gill, M.D., State Regent, International College of Surgeons, 711 South Jefferson Street, Roanoke, Virginia.

13th ANNUAL SOUTHWEST REGIONAL CANCER CONFERENCE

September 20, 1959 — **Fort Worth, Texas**

The Fort Worth Academy of Medicine will present the 13th Annual Southwest Regional Cancer Conference on September 20, 1959, under the sponsorship of the Tarrant County Medical Society and the Tarrant County Unit, American Cancer Society. Further information may be obtained from the Tarrant County Medical Society, Fort Worth, Texas.

AMERICAN HEART ASSOCIATION

32nd Annual Scientific Sessions

Trade and Convention Center — **October 23-25, 1959**

Philadelphia, Pennsylvania

The 32nd Annual Scientific Sessions of the American Heart Association will be held at the Trade and Convention Center in Philadelphia, October 23-25, 1959. Forms for registering and for reserving accommodations are now available from the Association, 44 East 23rd Street, New York 10, New York.

44th SCIENTIFIC ASSEMBLY

Interstate Postgraduate Medical Association

November 2-5, 1959 — **Palmer House**

Chicago, Illinois

The 44th Scientific Assembly of the Interstate Postgraduate Medical Association will be held in the Palmer House, Chicago, Illinois, November 2-5, 1959. Advance registration fee of $10.00 should be mailed to Erwin R. Schmidt, M.D., Box 1109, Madison 1, Wisconsin. Hotel reservations should be directed to the Palmer House, Chicago.

AMERICAN COLLEGE OF ALLERGISTS

Graduate Instructional Course and Annual Congress

February 28-March 4, 1960 — **The Americana Hotel**

Bal Harbor

Miami Beach, Florida

The American College of Allergists will hold a Graduate Instructional Course and Annual Congress February 28 to March 4, 1960 at the Americana Hotel, Bal Harbor, Miami Beach, Florida. For further information, contact John D. Gillaspie, M.D., Treasurer, 2049 Broadway, Boulder, Colorado.

Have You Heard?

HARRIS D. RILEY, JR., M.D., Department of Pediatrics, University of Oklahoma School of Medicine, will be one of the speakers for the Twenty-Fourth Piedmont Graduate Clinical Assembly, to be held in September at Clemson, South Carolina.

HERVEY A. FOERSTER, M.D., Oklahoma City, and E. T. COOK, JR., M.D., Anadarko, spent two weeks in July at Fort Hood, Texas, taking training at the 44th Evacuation Hospital. Doctor Foerster is a Colonel and Doctor Cook is a Lieutenant Colonel in the Medical Corps, USAR.

BILL WOODRUFF, M.D., a 1958 graduate of the University of Oklahoma School of Medicine, has established his practice in Hugo. He will be associated with the Reed Wolfe Clinic.

EDWARD D. GREENBERGER, M.D., McAlester physician, attended the Ninth International Congress of Radiology in Munich, Germany, July 23-30.

DAYTON ROYSE, M.D., who completed his internship at St. Anthony's Hospital in Oklahoma City in July, has joined the staff of the Weatherford hospital.

JAMES A. WEBB, M.D., Chief resident in general surgery at the University Hospital in Oklahoma City for the past three years, has recently opened offices in the Community Building in Ponca City.

NORMAN A. COTNER, M.D., established his practice in Grove this summer. Doctor Cotner graduated from the University of Oklahoma School of Medicine in 1958.

THE CITATION

MEDICO-LEGAL BRIEFS

Prepared by the Law Department of the American Medical Association

MEDICAL PROFESSIONAL LIABILITY—On April 7, 1958, a $97,892 judgment was rendered by a jury of the Fulton Superior Court, Atlanta, against a neurosurgeon. The plaintiff alleged that his twenty-nine year old wife had been totally disabled from brain operations performed by the defendant in 1952. He asked for damages for loss of his wife's services. The defendant had operated on the plaintiff's wife for alevation of epilepsy. The plaintiff contended that the operation should not have been performed and that after the operation the defendant declined to visit his wife at home for several weeks to render treatment. The neurosurgeon contended that the epilepsy was operable; that the operations were properly performed; that the plaintiff's wife's disability resulted from multiple sclerosis; and that he did not make house calls. Both sides presented medical testimony. The defendant has indicated that the judgment will be appealed.

Railey v. *Walker*, Fulton Superior Court, Atlanta, Georgia, April 7, 1958

ABORTION—The Supreme Court of North Carolina upheld the conviction of a physician for attempting to produce an abortion.

State v. Lee, 103 S.E. 2d 295 (N.C.., April 30, 1958)

DEGREE OF CARE REQUIRED OF A SPECIALIST—The plaintiff sought to recover damages for personal injuries alleged to have resulted from the negligence of a specialist in obstetrics steming from his failure to correctly diagnose and treat the plaintiff for an alleged pregnancy. Upon the basis of an examination and a "frog test," the defendant informed plaintiff that she was not pregnant. Plaintiff subsequently suffered a miscarriage. The Florida District Court of Appeal upheld a summary judgment in favor of the defendant stating that the plaintiff had not made a *prima facie* showing of negligence. The Court also held that: "There is no fixed criterion by which to mark the dividing line between the degree of care that must be exercised by those who engage as specialists in the several branches or fields of medicine as compared to the general practitioners. Neither insures the correctness of his diagnosis. Generally, it is the duty of each to apply to the diagnosis and treatment of his patient the skill, means and methods that are recognized as necessary to be followed in the particular case according to the standards of those who are qualified by training and experience to perform similar services in the community."

Grovella v. *Cochrane*, 102 So. 2d 307 (Fla., April 22, 1958)

TAX DECISION — In the taxable year 1956 the plaintiff physician was a participating graduate fellow in a training program in psychiatry at the Western State Psychiatric Institute and Clinic in Pittsburgh, receiving a stipend of about $3,400 from the University of Pittsbugrh. The U.S. District Court held that the stipend received was a fellowship grant within the meaning of 1954 CODE Sec. 117, and was excludable from gross income.

Wrobleski v. *Bingler*, U.S. District Court, West Dist. Pa.; Civil Action No. 16106; May 19, 1958

Further information on the preceding cases may be obtained from the Law Department, American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

Organization News

Doctor Donahue Resigns Mental Health Post

Hayden H. Donahue, M.D., Director of the Oklahoma Department of Mental Health for the past seven years, announced his resignation on August 4, when he wrote members of the Mental Health Board of his plans to seek a residency in psychiatry, do mental health research and complete the writing of a book. His resignation, which may actually turn into a year's leave of absence, was a shocking surprise to state government officials as well as to the medical profession.

> It has been recently reported that Doctor Donahue has accepted the position of Assistant Director, Arkansas State Hospital, Little Rock.

In his letter to the Board, Doctor Donahue said:

"Although from time to time during my professional career it has been necessary for me to write a letter that I disliked writing, I find that this letter is the most difficult that I have ever had to compose.

"During the six years and seven months that I have served as mental health director in Oklahoma, I have had the pleasure of working under twelve citizens who have made up this state's mental health boards.

"Throughout my career it has always been my good fortune to have had the pleasure of working for outstanding people, but I know of no group that I have been able to work closer to, or depend more completely on, than you who now compose our department's guiding force.

"It is because of the foregoing and my deep love and respect for all of you that I so greatly regret having to tender to you my official resignation.

Decision Explained

"My decision to resign from my post is a decision that has not been made lightly; for any decision that I might make will of necessity, to some degree, affect our patients, our program and our personnel. Because I recognize the seriousness of these factors, I have not only spent a number of months thinking this problem out, but have sought the advice and counsel of many of my friends before reaching my final decision.

"For over 17 years I have devoted myself exclusively to the task of attempting to bring better mental health programs to this nation's mentally ill and mentally retarded, and I am humbly grateful that I have been allowed to play a small part in the development of this new era.

"Now I am tired; I sincerely desire to spend more time with my family, with my studies and in the actual treatment of patients.

Work to Continue

"Undoubtedly I will return to the type of work that I am now doing; however, I intend to spend at least the next 12 months in improving my treatment techniques, working on some research and attempting to finish a book that I have been working on for many years.

"Naturally I intend to discuss this matter at some length at our presently scheduled September board meeting; however, I sincerely hope that you will consider this matter during the interim, for, now that I have made this difficult decision, I would naturally like to accomplish my purpose as soon as I can feasibly do so."

Under Doctor Donahue's direction, Oklahoma's mental health hospitals have increased their patient releases in ratio to admittances. The Oklahoma mental health system has brought national acclaim to the state as being a leader in the field.

No Politics Involved

During interviews following his resignation, the physician stressed that neither politics nor his relationship with the state legislature had influenced his decision to resign. This year's legislature gave a $2 million increase to operational funds for the mental hospital system and appropri-

ated $1 million for a new hospital for the mentally retarded.

Governor Issues Proclamation

Governor J. Howard Edmondson took cognizance of Doctor Donahue's contributions when he issued a proclamation stating:

" . . . very occasionally there emerges from the ranks of those officials whose destiny it is to direct the complex functions of state government, one whose qualities of leadership, devotion to duty and knowledge of his field, make him as outstanding in relation to men of more common clay as the brightest star in a celestial galaxy.

"Primarily under the direction of Doctor Hayden H. Donahue, Oklahoma mental hospitals and schools for the retarded have risen from institutions regarded as 'snake pits' in the not too distant past, to a position reflecting dignity, pride and national pre-eminence."

Testimonial Dinner Planned

The proclamation declared September 22 as Donahue Appreciation Day and plans for a testimonial dinner have been made for that date by Robert J. Willoughby, Deputy Director of the Department of Mental Health. Mr. Willoughby reported that over 1,000 tickets will be sold, on a "first come, first served" basis, for the affair scheduled for 6:30 p.m., at Beverly's Country Club, NE 52nd and Santa Fe, Oklahoma City.

Governor Edmondson will be the principal speaker and George Guthrey, M.D., will serve as Master of Ceremonies. Tickets may be obtained at $3.00 each by sending a check to Box 3095, Oklahoma City.

Association Worker

The Oklahoma State Medical Association will also suffer a loss when Doctor Donahue leaves the state for further specialty training. For the past year and one half, he has done yeoman's service for his professsion in serving as Chairman of the OSMA Committee on Aging. In the same field, he is currently a member of the President's Committee for the White House Conference on Aging which is scheduled for January, 1961.

In June, 1959, he and other Oklahoma physicians met with Oklahoma's congressional delegation in Washington to voice opposition to the Forand Bill. He has maintained continuous contact with Oklahoma's lawmakers in an effort to sell them on the merits of a free enterprise health care system.

SW States to Host Dallas AMA Meeting

Plans are being formulated by the state medical societies of Oklahoma, Texas, Arkansas, New Mexico, Arizona and Louisiana to roll out a southwestern welcome mat to AMA officials, delegates and officers of other state societies who attend the AMA Clinical Session scheduled for Dallas, December 1, 2 and 3. The gesture follows a precedent set by other regions in which AMA meetings have been held.

The six host states plan to maintain a "Southwestern Suite" daily throughout the meeting and arrangements have been made to utilize the Skyway Suite of the Adolphus Hotel for this purpose. Invited guests will find the suite, which is located in the AMA headquarters hotel, open for refreshments and buffet lunch between 11:30 a.m. and 2:00 p.m. each day.

Physician representatives of the host states will be on hand to welcome the guests, with Texas being responsible for December 1, Arizona, Arkansas and Louisiana for December 2, and Oklahoma and New Mexico for December 3. It is anticipated that several hundred physicians will attend the affair each day and enjoy the buffet featuring "typical" foods of the southwest. Also, some of the states will distribute inexpensive favors depicting the culture or economy of their areas.

Oklahoma's participation in the event was approved by the Council in August, and the necessary funds were appropriated. Costs of the affair will be shared by participating states based upon the number of Delegates each has to the AMA. The Delegates and Alternate Delegates from Oklahoma will serve as the planning committee to develop the details of Oklahoma's contributions.

New Committee Structure Announced

President Alfred T. Baker, M.D., has released information on a unique committee structure which will be tested during his term of office, and has named 134 physicians who have agreed to serve in the various organizational slots provided by the plan. The reorganization plan is a small-scale reproduction of the new committee structure of the American Medical Association, and its recent adoption represents a twofold effort to dovetail OSMA activities into the national pattern and, at the same time, initiate much needed streamlining and efficiency in handling the ever-increasing projects and problems of the state organization.

The transition to the new structure actually began prior to the 1959 annual meeting of the association, when Doctor Baker and out-going President, E. C. Mohler, M.D., devised and developed the details of the evolutionary step.

Under the new setup, the chain of command of the OSMA will pass successively from the House of Delegates to the Council, to the President and his Executive Committee, to five newly-created special Councils, and finally to the committees themselves. According to Doctor Baker, the main change that has been made is to group the multitude of committees under an overlay of the five Councils, which are designated as Public Policy, Insurance, Socio-Economic Activities, Professional Education and Public Health. The purpose of creating another step in the conduct of association activities is to relieve the President from being singularly responsible for the coordination and consistency of some twenty to forty committees which are thought to be necessary for organized medicine to keep abreast of its internal and external obligations.

In explanation, Doctor Baker cited the new Council on Socio-Economics Activities as a case in point. Gathered under the direction of this Council will be all committees dealing with governmental, labor, industrial and voluntary health programs where a third party has been introduced into the doctor-patient relationship. He pointed out that all levels of organized medicine have been guilty of inconsistencies on such matters and that he is hopeful that the Council can guide the committee efforts along consistent philosophical lines.

How It Works

In contrast to the old system where the President or the policy-making bodies assigned problems or projects to a committee and the President was left with almost sole responsibility as liaison officer, the new system will allow assignments to be referred to the new Councils for further referral to an appropriate committee. The members of the Council, in turn, will serve in a supervisory capacity and periodically report to the President on all committee activities under their direction. The President will also give the Councils the authority to initiate programs of their own.

In order to further strengthen effective liaison, the chairman of each association committee will serve as a member of the appropriate Council. Some of the Councils have been further bolstered by the addition of other physicians who were felt to have particular experience or abilities.

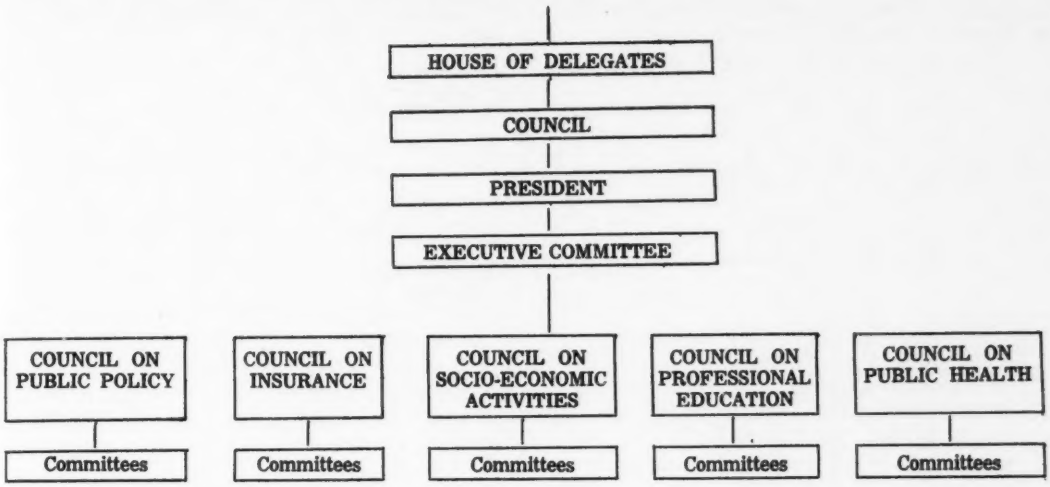
At annual meeting time, it is anticipated that the Council chairmen will report to the governing bodies on the overall accomplishments during the preceding year and the committee chairmen will also give more detailed reports on their specific endeavors.

If It Works

If experience with the one year trial-plan proves its effectiveness, the governing bodies of the association will consider appropriate amendments to the constitution and by-laws which will establish the system on a permanent basis. Among the principle changes thought to be necessary would be the redesignation of the present Council to the Board of Trustees. This change would prevent its confusion with the new "Councils." Another change mentioned by Doctor Baker as being worthy of consideration would be the re-designation of the present Executive Committee to the Executive Council and making provision for its membership to be comprised, at least in part, of the Chairmen of the other Councils.

Doctor Baker plans to call a briefing meeting of all Council chairmen early in the working year. It is hoped that this meeting will provide an effective kickoff for association activities during this administration.

ORGANIZATIONAL STRUCTURE



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1959-60

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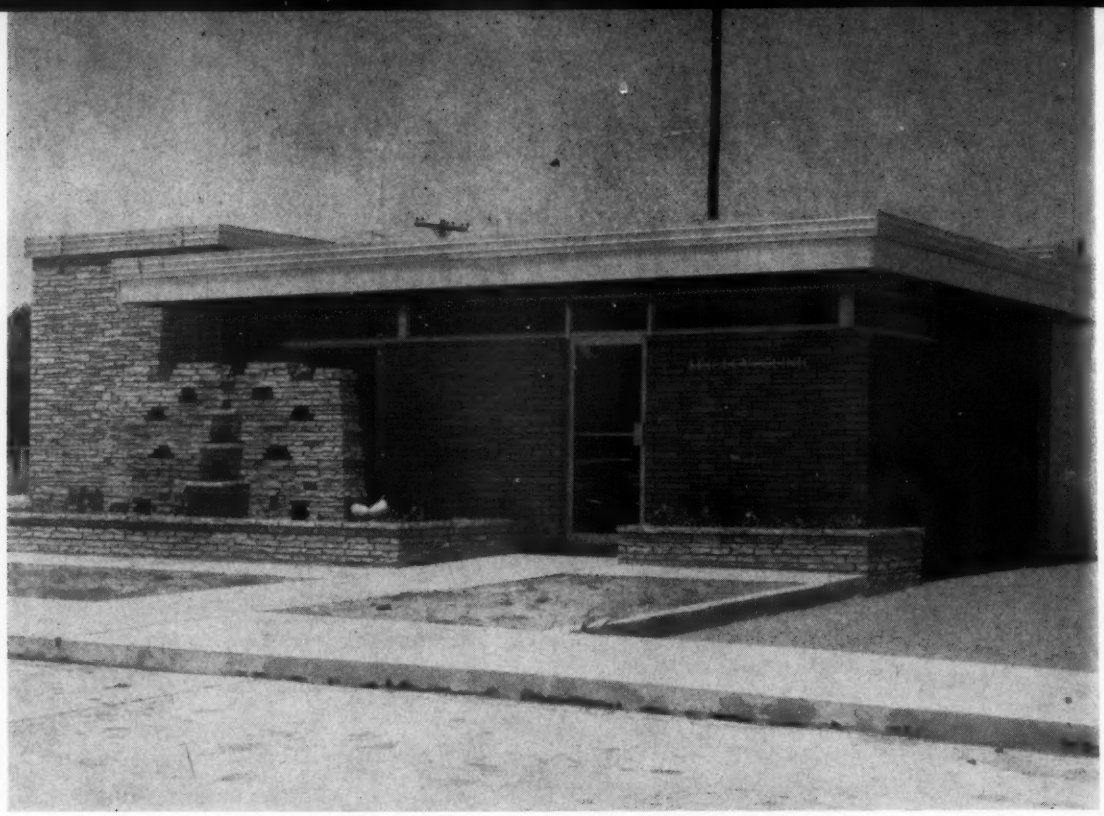

New Srigley Clinic Opened in Altus

The Srigley Clinic, 1111 East Pecan, Altus, was formally opened in July by R. S. Srigley, M.D. Built of concrete, steel and stone, the new modern structure contains 1,850 square feet of floor space.

Exterior of the building, which is located directly across from the Jackson County Memorial Hospital, is faced with stone. A fountain and stone wall decorate the front of the building.

Included in the floor plan of the new clinic are complete laboratory, x-ray, consultation room, surgery and physiotherapy room, two examining rooms, nurse's station, business office and waiting room. The clinic was designed so that it may be expanded in any of three directions on the 150 foot lot.

Phelps to Tour Far East Hospitals

Malcom E. Phelps, M.D., El Reno, has been appointed as a Consultant in General Practice to the Surgeon General and will leave November 2 for a tour of military medical installations in the Far East. During his tour, he will visit installations in Hawaii, Japan, Okinawa, Korea, Hong Kong and other points throughout the Far East.

As a past-president of the American Academy of General Practice, he has served in an advisory capacity to the Surgeon General's Office on previous occasions. The proposed overseas tour will be publicized widely at the medical facilities to be visited since Doctor Phelps and others will address the respective staffs on selected subjects of interest.

State Board Is Named by Governor

Governor Edmondson recently announced the appointment of members of the State Board of Medical Examiners. Named as members of the board are:

Lillian Robinson, M.D., Enid; C. Riley Strong, M.D., El Reno; Wayne A. Starkey, M.D., Altus; C. E. Northcutt, M.D., Ponca City; W. Pat Fite, M.D., Muskogee; E. F. Lester, M.D., Oklahoma City; and Marshall O. Hart, M.D., Tulsa.

Proceedings of the Special Session Of The House of Delegates

AUGUST 2, 1959

A special session of the House of Delegates of the Oklahoma State Medical Association was held on Sunday, August 2, 1959, at 1:00 p.m. in the auditorium of the First National Bank of Oklahoma City. The meeting was called to order by Doctor Clinton Gallaher, Speaker of the House of Delegates.

The Speaker requested those entitled to vote to be seated to the front and other members of the Association and guests to be seated to the back.

The Invocation was given by M. B. Glismann, M.D., Oklahoma City.

The Chair announced the following appointments for the session:

Credentials Committee:

C. Riley Strong, M.D., Chairman, El Reno
A. L. Buell, M.D., Okmulgee
H. V. Schaff, M.D., Holdenville

Sergeants at Arms:

Ollie McBride, M.D., Ada
Charles E. Wilbanks, M.D., Tulsa

Teller:

M. A. Neumann, M.D., Okarche

Parliamentarian:

J. Hoyle Carlock, M.D., Ardmore

The Speaker called for the introduction of guests. He reported that the House of Delegates, and all who attended the meeting were the guests of Mr. John H. Miller, Vice President and Trust Officer of the First National Bank and Trust Company. Mr. Miller was introduced to the House of Delegates.

Doctor Gallaher called for announcements. There were no announcements from the floor. The Speaker paid respect to the following members who were usually present at the meetings of the House of Delegates: Doctor George H. Garrison, Oklahoma City, was unable to be present because of recent reconstructive surgery; Doctor William T. Gill, Ada, received word of the death of his mother; and Mr. Dick Graham, Executive Secretary of the OSMA, was attending the funeral of his wife's brother.

The Speaker asked the Credentials Committee Chairman, Doctor C. Riley Strong, if a quorum was present. Doctor Strong reported that a quorum was present.

As the first order of business, the Speaker announced the consideration of the membership status of Doctor H. M. "Red" McClure, formerly of Chickasha, Oklahoma, who now resides in Coral Gables, Florida. The Chair asked to recognize Doctors S. D. Revere and J. J. Swan of Chickasha; however, neither were present at the moment. Mr. Don Blair, Associate Executive Secretary of the OSMA was asked to present the proposition. Mr. Blair announced that Doctor H. M. McClure was nominated for honorary life membership at the annual House of Delegates meeting, held in Tulsa in April, 1959. Due to a technicality, called to the attention of the House of Delegates by the Parliamentarian, it was not possible to grant this recognition because it had not been brought before the Council the preceding day. The Council was polled by mail after the annual meeting, and they unanimously recommended him for honorary life membership. This matter is now being brought back to the House of Delegates for final disposition.

Doctor Wilkie D. Hoover, Tulsa, moved that the application for honorary life membership for Doctor H. M. McClure be approved by the House of Delegates. This motion was duly seconded and carried unanimously.

The second and final item for consideration was a proposal to provide a service-type prepaid health care plan for senior citizens. At this point, Doctor Gallaher read a letter dated July 22, 1959, from Alfred T. Baker, M.D., President of the OSMA, which was mailed to the County Society Presidents and Secretaries. In this letter, Doctor Baker stated the purpose of the special meeting of the House of Delegates and urged the societies to carefully consider the proposal and to advise their delegates of the collective attitude of their respective society. He also informed the societies that any member of the Association was welcome to attend the meeting as a guest.

As a matter of further review, Doctor Gallaher read from the June, 1959 issue of the OSMA **Journal**, The Report on Health Insurance for Senior Citizens as presented to and approved by the House of Delegates in April, 1959, which is as follows:

"In conformance with the A.M.A. action, the OSMA Committees, already concerned with the problems of the aged, held a series of joint meetings in this regard. During these meetings, the joint group discussed a variety of alternate plans to meet the health cost problem for this age segment. Finally, the need for a cautious approach to this problem conflicted with the time element and it was decided that the proposal to this House of Delegates would be based upon certain principles rather than on the submission of a specific program.

"The group, therefore, approved the following motion which it now respectfully offers for your consideration: It is recommended:

1. That a service-type health insurance program be approved for the sixty-five and over age group.
2. That service benefits be offered to those whose income and net worth fall below approved ceilings, with $6,000 as the suggested income ceiling.
3. That it be stipulated that the following points be taken into account in the development of such a service contract:

   A. Physicians and hospitals are to be offered the best possible fees, in keeping with a saleable premium.

(Continued on Page 634)

wherever there is inflammation, swelling, pain

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1. Innerfield, I.: Clinical report cited with permission
2. Clinical report cited with permission

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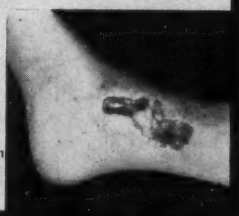

INFLAMMATORY
DERMATOSIS
rapidly spreading
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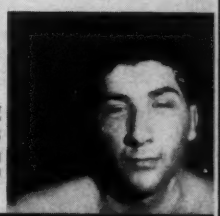
healed within
a week[1]



INFECTED
LACERATION
marked reversal
in 3 days...
returned
to school...
closure advanced[1]

THROMBOPHLEBITIS
back on his feet
in a week after
recurrent episode[1]

REFRACTORY
CELLULITIS
normal routine
resumed after 4 days
of VARIDASE[1]

B. After allowing ninety days following the annual meeting for the development of the program, a special meeting of the House of Delegates will be called to ratify, reject or modify the proposal."

Doctor Gallaher reported that Doctor Baker had appointed a joint committee to develop a proposal for the consideration of the House of Delegates; and that the Council of the OSMA met at the Executive Office of the Association on August 1, 1959, and submitted the following recommendations to the House of Delegates:

"Doctor Charles Green moved that the Council thank the joint committee of the Blue Cross-Blue Shield Liaison Committee and the Sub-Committee on Insurance and Retirement for the work they had done."

This motion was duly seconded and carried.

"Doctor L. B. Word moved that the Council does not recommend the approval of the plan as submitted."

This motion was duly seconded and carried.

The Speaker gave the following definition of a "service-type" program: "The service-type program includes the idea that physicians participating in the program will accept the suggested fees as payment in full for services rendered, and will not solicit nor accept any additional compensation." He added that it was the moral duty of the House of Delegates to make a definite decision about this problem and that there were four options:

1. Adopt the plan as proposed by the Committee.
2. Propose certain changes for further consideration of the committee.
3. Deny approval of the committee's report.
4. Must make some definite recommendation for further consideration of a committee.

Doctor Gallaher said that the problem could not be erased by evading the issue and urged medical leadership while there may yet be time. He requested that after the presentation was made, a motion would be made prior to discussion.

The Chair recognized Alfred T. Baker, M.D., President of the OSMA; J. R. Stacy, M.D., Chairman of the Federal Legislative Committee; and H. H. Donahue, M.D., Chairman of the Joint Committee of the Blue Cross and Blue Shield Liaison Committee and the Sub-Committee on Insurance and Retirement, all of whom assisted in the presentation of the proposal.

Doctor Alfred T. Baker urged each delegate to seriously consider the proposal. In the event the proposal was rejected, he asked that they study the basis for opposition and devote more serious study to the development of a more acceptable program.

Doctor J. Raymond Stacy reported on the activities of the Federal Legislative Committee of the OSMA, which has been trying to educate and stimulate thinking and letter writing to the House Ways and Means Committee, before which the Forand Bill has been presented, and also to the members of the House and Senate from Oklahoma. He reviewed the provisions of the Forand Bill, which would provide free medical, surgical, dental, hospital, and nursing home care for the recipients of Social Security. He requested that each member study the Forand Bill and other similar bills which would affect the freedom of private enterprise.

Doctor H. H. Donahue reported that the draft and proposal was being brought back to the House of Delegates, as a directive of their meeting in Tulsa in April, 1959. He reported that the proposal represented the opinion of the majority of the members of the committee, and that they had reviewed many types of insurance programs: service-type, indemnity-type, the type where the individual pays a certain amount to defray certain costs, and the point system for allocation of funds to physicians. He reported that there was no set plan developed in the United States by any of the medical societies—that each plan was different.

Doctor Donahue reported that some of the problems that had to be considered in developing a proposal were:

(1) They had to develop something that was saleable to the people over 65.

(2) The representatives of the insurance companies informed the committee that the cost of this insurance would have to be kept in the range of $6.00 if it were to sell.

(3) That this proposal should be something that would at least come in some scope of being an alternate for the Forand type legislation.

It was reported by Doctor Donahue that using the $6.00 figure as a basis, the committee tried to develop the best possible coverage for this cost; and that the suggested fees were 50% of the medicare schedule.

Doctor F. C. Wallingford, Bartlesville, moved that the House of Delegates reject the proposal submitted by the Committee. The motion was duly seconded.

Doctor Louis H. Ritzhaupt, Guthrie, made a substitute motion that the House of Delegates consider the Senior Citizens Insurance Program, step by step, beginning with Item 1, Page 1, at which time they would decide whether they wanted an indemnity type program instead of the service type. This motion failed for lack of a second.

After further discussion, the original motion made by Doctor Wallingford was voted upon and unanimously carried.

Doctor Ollie McBride, Ada, moved that no "service-type" insurance program be accepted. This motion was duly seconded and carried.

Doctor Malcom E. Phelps, El Reno, moved that the House of Delegates recommend to the President of

the Oklahoma State Medical Association that he appoint a committee to investigate an indemnity type prepaid health insurance program for citizens age sixty-five and over and report back to the House of Delegates. This motion was seconded by Doctor Ritzhaupt and carried.

Discussion was held, pro and con, concerning the feasibility of appointing a new committee to conduct this investigation of the indemnity type insurance program. It was generally agreed that the existing committee should continue to function. It was also the feeling of some of the delegates that the committee should be paid for the time spent in conducting the research for the service-type program. No further action was taken on the latter point.

Doctor H. E. Denyer, Bartlesville, made the following substitute motion: That the House of Delegates, recognizing the need for a voluntary prepaid health insurance program for the sixty-five and over age group, recommends that a committee continue to work on this program, divorcing hospital care from physician's fees and instructing the committee that only an indemnity type contract with fees no less than Medicare be considered. This motion failed to receive a second.

Doctor George T. Ross, Enid, moved that Doctor Phelp's motion be amended to the effect that the committee report back to the House of Delegates within sixty (60) days. The motion was seconded.

Doctor T. E. Rhea, Idabel (pointing out that the Council had first rejected the service-type insurance program, which was subsequently rejected by the House of Delegates), moved that the committee's proposal for an indemnity type prepaid health insurance program first be presented to the Council, and when the Council felt that a program was presented which would possibly be approved by the House of Delegates a meeting would be called. This motion was duly seconded and carried.

Doctor P. E. Russo, Oklahoma City, moved that the deliberations of the Insurance Committee shall not include any reference to hospital problems, financial or otherwise. This motion was duly seconded and carried.

After discussion concerning the various points that the delegates wished to be specifically covered in the investigation of an indemnity type insurance program:

Doctor Frank J. Nelson, Tulsa, moved that each delegate who had suggestions with reference to what they wanted in this new type insurance program, should write to Doctor Baker and make clear their suggestions for the consideration of the committee. This motion was seconded by Doctor Wilbanks and carried.

Doctor M. O. Hart, Tulsa, moved that the meeting be adjourned. The motion was seconded and the meeting adjourned at 3:30 p.m.

American Board of Ob-Gyn Schedules Examination

The American Board of Obstetrics and Gynecology, Inc. has announced the next scheduled examination (Part 1), written, and review of case histories for all candidates will be held in various cities of the United States, Canada, and military centers outside the Continental United States, on Friday, January 15, 1960. Candidates must submit case reports to the office of the Secretary within thirty days of being notified of their eligibility to Part 1.

Current bulletins may be obtained by writing to Robert L. Faulkner, M.D., Executive Secretary and Treasurer, 2105 Adelbert Road, Cleveland 6, Ohio.

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13th CLINICAL MEETING

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BLUE CROSS PERCENTAGE UTILIZATION BY COUNTY

HOSPITAL CARE USED—1958 AVERAGE COMPARED TO AVERAGE FOR FIRST SIX MONTHS OF 1959

County Name	1958	6 mos. 1959	County Name	1958	6 mos. 1959
Adair	122.0%	98.0%	Lincoln	108.5	115.7
Alfalfa	90.1	106.8	Logan	57.1	57.6
Atoka	92.0	106.8	Love	76.4	112.5
Beaver	100.5	83.3	McClain	89.3	97.4
Beckham	101.2	111.6	McCurtain	113.0	123.1
Blaine	115.0	98.6	McIntosh	66.4	94.0
Bryan	70.5	66.6	Major	97.8	97.5
Caddo	97.1	93.2	Marshall	93.8	54.1
Canadian	83.3	86.1	Mayes	92.6	79.4
Carter	92.3	81.2	Murray	69.1	72.9
Cherokee	113.3	91.7	Muskogee	78.4	76.7
Choctaw	106.7	121.7	Noble	98.0	103.4
Cimarron	88.7	116.6	Nowata	120.3	121.2
Cleveland	84.8	80.1	Okfuskee	91.5	83.0
Coal	126.6	103.9	Oklahoma	78.1	69.8
Comanche	89.9	102.3	Okmulgee	95.4	117.7
Cotton	91.6	85.9	Osage	102.3	125.2
Craig	98.4	131.6	Ottawa	101.8	106.4
Creek	109.9	129.4	Pawnee	109.3	111.4
Custer	104.2	82.9	Payne	93.0	87.2
Delaware	100.9	156.2	Pittsburg	103.9	103.2
Dewey	86.7	78.2	Pontotoc	101.0	103.1
Ellis	79.0	112.5	Pottawatomie	84.5	84.0
Garfield	115.0	113.6	Pushmataha	113.0	103.2
Garvin	75.0	97.8	Roger Mills	111.6	151.9
Grady	77.0	69.2	Rogers	96.4	89.1
Grant	106.4	115.2	Seminole	78.5	63.8
Greer	81.5	76.1	Sequoyah	89.7	161.6
Harmon	60.6	68.0	Stephens	97.0	90.7
Harper	90.1	108.7	Texas	118.1	105.4
Haskell	73.3	87.7	Tillman	115.4	101.2
Hughes	106.1	96.7	Tulsa	103.8	99.1
Jackson	82.6	83.1	Wagoner	97.6	75.6
Jefferson	133.5	139.7	Washington	100.5	107.7
Johnston	74.0	68.9	Washita	108.4	82.5
Kay	90.3	76.6	Woods	107.2	98.0
Kingfisher	81.9	73.0	Woodward	91.4	97.1
Kiowa	88.2	97.6			
Latimer	114.8	122.9			
LeFlore	86.9	87.1	Average	94.6%	97.8%

NOTE: Utilization is on a paid basis and does not include reserves, operating expenses, nor any estimated retroactive payments.

Released at the request of the Blue Cross-Blue Shield Liaison Committee for the Information and Education of OSMA members.

Auxiliary News

Inevitable Trio

Through the centuries it is likely that few of us have challenged the inevitability of "death and taxes." It seems likely that this duo of finality is gradually becoming a trio, joined by mental health.

In the over-all Auxiliary picture, as in most aspects of living itself, Mental Health seems intangible. It is so closely related to Public Relations, Community Service, Safety, many of our labelled projects.

Unless personally involved, how do we manifest awarness? We donate, individually and through organizations, to the National Association for Mental Health. We read an occasional good book, see a movie or play which is obviously promoting a better understanding of the true mental health picture. We have our attention called to the inadequacy of funds and care in our institutions, or to the fact that too little is being done toward rehabilitation of mental patients.

Fall House Cleaning

With our imminent fall house-cleaning, we can surely devote as much time to mature consideration of the mental health of our own family. Just as we try new appliances and new cleaning methods, we can evaluate and begin constructive approaches to mental and emotional problems of each member. "Individual Responsibility for Better Community Health," is most applicable here. Beginning in our own homes, we can expand community-wise, spot-lighting Mental Health as one of our priority projects.

Approved Projects

Included in priority projects approved by the Council on Mental Health of the A.M.A. are these three: 1) Youth; 2) Alcoholism; and 3) Aging.

1) All over the United States Auxiliaries are introducing two series of educational value. "Pierre the Pelican" consists of a total of 28 pamphlets to be sent over a six-year pre-school period. Parents are issued twelve monthly bulletins during the first year. This series presents growth and emotional attitudes, needs, personality and behavior problems in the infant and child.

The rising marriage and divorce rate among teen-agers prompted the writing of "Milestones for Marriage." This series of nine letters is sent monthly to high-school seniors for discussion groups. The letters are timely and well-written, definitely aimed at the conflicts involved, not conclusively, but thought-provoking for discussion groups.

Consider these two series for P.T.A. and church study sponsorship. Work with your local Mental Health organization to introduce them, with the approval of your own county society, of course.

Additional information can be obtained from the Louisiana Association for Mental Health, 1528 Jackson Avenue, New Orleans 13, Louisiana.

2) Alcoholism education is necessary to meet a serious social problem. Perhaps in no other state is this aspect more timely than in Oklahoma. Consult your local Mental Health agency, or obtain material from our State Chairman, Mrs. George H. Guthrey, 532 N.W. 40, Oklahoma City.

3) Many auxiliaries will be asked to participate in the conferences preparatory to a White House Conference on Aging, which will be held in 1961. (Many of us are now working on material for the White House Conference on Youth to be held in 1960). We can also assist the aged in our neighborhoods, county and state institutions and nursing and rest homes. Of more than twenty-five million hours spent last year in connection with Auxiliary projects, many can be devoted to these projects for this year.

25 YEARS AGO

Articles published in *The Journal* of the Oklahoma State Medical Association, September, 1934.

SEPTICAEMIA

L. J. Starry, M.D., Department of Surgery
Oklahoma University Medical School, Oklahoma City

Since the time of Hippocrates we have been studying the major problem of blood infections and yet the mortality rate at the present time is something over seventy per cent. This statement may explain the necessity and timeliness of a discussion at this time. Although many of the factors relative to this subject are controversial, a brief consideration of the prevalence of the condition and the results we are obtaining in its treatment, will convince the thoughtful individual that there is some need for a more thorough consideration, more definite understanding, and a crystallization of the many ideas of treatment in the hope that better results may be forthcoming.

Of the various types which have been mentioned, it is quite true that the staphlococcic infections give the worse prognosis—next the various streptococcus strains and finally the colon bacillus infections will give the best prognosis. The first usually arises from some skin lesion which has been entirely untreated or improperly treated. Strept infections follow criminal abortions, angina and the like. The source of the colon bacillus infection is usually from the bowel or from the bowel contaminations.

Supportive treatment, consisting of intravenous glucose, high caloric diet, whiskey, subcutaneous saline and blood transfusions will do more good than any specific form of treatment. In the case of the whole blood transfusions we have not only a general remedy but also a specific stimulation of defense mechanism by the addition of blood salts and healthy cells from the reticulo-endothelial system. The effect of the various dyes and alcohol administered intravenously is on the defense mechanism of the body and decidedly not as sterilizing agents in the blood stream itself. It is not quite logical to assume that any agent of sufficient strength to kill bacteria in the blood stream would leave the individual blood cells unharmed.

In the past fourteen years there have been admitted to the University and St. Anthonys hospitals in Oklahoma City a total of 268 cases of septicaemia; of this total there has been 180 deaths, or a mortality of 67 per cent. These cases were divided in the following manner: Fifty-one cases of puerperal sepsis with twenty-six deaths, a rate of 58 per cent; forty-one cases of peripheral infections such as cellulitis, furuncles and carbuncles with twenty-nine deaths, a rate of 70 per cent; peritoneal abscesses principally appendiceal in origin twelve cases with ten deaths, a rate of 83 per cent; pelvic abscesses and other so-called internal abscesses, fifteen cases with thirteen deaths, a rate of 86 per cent; mastoid infections, seven cases with two deaths, or a rate of 28 per cent; thirty-five cases of osteomyelitis with thirty-one deaths, or a rate of 88 per cent; infections of the kidney, eight cases with one death, or a rate of 12½ per cent (the lowest of all); five cases of angina with four deaths, a rate of 80 per cent; five cases of arthritis with four deaths, a rate of 80 per cent; thirty-seven cases of unknown primary pathology with sixteen deaths, a rate of 43 per cent and one of empyema, two of Vincent's disease and three dental infections, all with a mortality rate of 100 per cent.

As a result of this discussion and these rather terrible figures, it would seem that the study of septicaemia is entitled to more effort and concentration than it has received in the past.

Deaths

C. J. FISHMAN, M.D.
1882-1959

C. J. Fishman, M.D., 77-year-old Oklahoma City physician, died July 26, 1959.

Doctor Fishman was a native of Vilna, Poland, moving to this country in 1887. He graduated from Rush Medical College, Chicago, in 1908 and took postgraduate training in Berlin and Vienna. In 1913 he established his practice in Oklahoma City.

In addition to being Professor Emeritus of the University of Oklahoma School of Medicine, Doctor Fishman was a Fellow of the American College of Physicians and a member of the American Board of Internal Medicine.

O. A. PIERSON, M.D.
1867-1959

O. A. Pierson, M.D., 91-year-old, pioneer Woodward physician, died July 31, 1959. He was the father of D. D. Pierson, M.D., of Mangum.

A native of Davis County, Iowa, Doctor Pierson moved to Oklahoma in 1877. He graduated from Keokuk Medical College in Iowa in 1903 and has practiced in Woodward since that time.

In 1953 Doctor Pierson was honored for his years of service to the medical profession when he was presented a Life Membership by the Oklahoma State Medical Association.

PHYSICIAN PLACEMENT

General Practice

Donald D. Arthurs, 3240 N.W. 26th St., Oklahoma City, Oklahoma, age 27, married, graduated from Oklahoma University School of Medicine, 1958, available immediately. No military obligations.

D. H. Bessesen, M.D., Grand Canyon Hospital, Grand Canyon, Arizona, age 61, married, Episcopalian, graduate University of Minnesota, member Minnesota Surgical Society, General Practice, General Surgery, interested University Health Service or Industrial. Prefers Southwestern part of U.S., available Oct. 1, 1959.

Johnny Bill Delashaw, 1905 1st Avenue, N., Texas City, Texas, age 25, married, graduated from University of Texas Medical Branch, 1959, will be available upon completion of internship, July, 1960.

Arnold Giesbrecht, M.D.. Hallock, Minnesota, age 34, Canadian, married, Lutheran, graduate Winnipeg, Manitoba, 1957, prefers locum tenens or association with small group: suburban or locality close to cities.

Louis E. Harrington, M.D., Danbury, Iowa, age 37, married, graduated from Wayne University College of Medicine, Detroit, Michigan, 1949, veteran, will be available September, 1959.

Sherman Allen Hope, M.D., 1105 Yale Ave., Panama City, Florida, phone PO 3-6656, age 27, married, Baptist, graduate University of Oklahoma School of Medicine, 1957, in the military, discharge June 26, 1960, group, associate or solo, prefers Western and Midwestern U.S., available June 1960.

Robert Emmett Myers, M.D., 872 Ravine Drive, Cleveland 12, Ohio, age 28, married, graduated from University of Arkansas, 1955. Would like to do general practice with emphasis on pediatrics, veteran, will be available September, 1959.

Wyatt Bibb Pouncey, M.D., 118 Louise Lane, San Mateo, California, age 34, married, graduated from University of Alabama, 1950, veteran, available immediately.

Paul J. Vega, M.D., 6070 Orleans Ave., New Orleans, Louisiana, telephone Au-2584, age 26, married, Protestant, graduated from Louisiana State University, 1956, no military obligations, 6 years prior service. Interested in General Practice, available now.

Robert Glenn White, Jr., M.D., 431 Saratoga, San Antonio, Texas, age 26, married, graduated from University of Oklahoma, 1956, presently in military service, will be available August 2, 1959.

Thomas S. Whitecloud, M.D., 858 Market Street, Pascagoula, Mississippi, age 45, married, graduated from Tulane, 1943, veteran, has an interest in teaching and wishes to get into small hospital work, availability date depends upon situation.

Internal Medicine

Doss O. Lynn, M.D., 6101 16th Street, N.W., Washington 11, D.C., age 47, married, graduated from University of Oklahoma, 1937, board certified in internal medicine and cardiology, will have completed 21 years active service September 1, 1959, prefers institutional or industrial practice, will be available after September 1, 1959.

Vanis Pennington, M.D., 1440 W. Bethune, Apt. 402, Detroit, Michigan, age 30, married, graduated from University of Tennessee, 1953, veteran, will be available December, 1959.

Van B. Saye, Jr., M.D., 1230 Brockenbraugh Court, Metairie, Louisiana, phone VE 5-1968, age 29, married, Baptist, graduate Medical College of Georgia, 1954, Air Force Reserve, available July 1, 1960, prefers Southwest or Southeast.

Locum Tenens

Frank H. Cooper, M.D., will complete internship at St. John's Hospital, Tulsa, on July 1. Would like to have locum tenens in general practice for one week, available after July 1.

Don Allen Mills, M.D., 3911 Burns Place, S.E., Washington, D.C., age 34, married, veteran, graduated from Georgetown University School of Medicine, 1958, wants to do general practice for two years prior to specialized training. Will be available July 1, 1959.

Obstetrics and Gynecology

Abshere, Lynn W., M.D., 708 N.E. 14, Oklahoma City, phone CE 6-8087, age 31, married, Catholic, graduate University of Oklahoma, 1956, member American College of OB-GYN, served United States Navy '46-'49, group or associate practice, available July 1, 1960.

Robert Lee Crews, M.D., 5040th USAF Hospital, Anchorage, Alaska, age 31, married, graduate of Vanderbilt, 1954, board eligible, will be available July, 1960, upon completion of military service.

Gerald R. Keilson, M.D., Medical Arts Building, Dallas, Texas, age 31, married, graduated from University of Texas, 1953, board qualified, veteran, will be available in July of 1960.

Milton Gardner Mutch, Jr., M.D., 423 Mills Avenue, Fargo, North Dakota, age 31, married, graduated from University of Minnesota, 1955, will be Board eligible upon completion of fellowship, veteran, will be available July 1, 1959.

Radiology

Thomas A. Lynch, M.D., 7009 N. 17th Street, Tacoma, Washington, age 39, married, graduated from University of Washington, 1950, board certified, veteran, availability date depends on circumstances of new position.

Surgery

(Name on Request) 32 years old, married, graduated from Tulane, 1952, veteran, board eligible in surgery.

General Surgery

Sam Leslie Robinson, M.D., University Medical Center, Jackson, Mississippi, age 30, married, graduated from University of Tennessee, 1953, will be available July, 1961, on completion of residency.

Cancer Symposium to Be Held in December

The Sixth Annual Cancer Symposium will be held December 5, 1959, at the Skirvin Hotel, in Oklahoma City. "Cancer of the Breast" will be the subject of the meeting.

Four prominent guest speakers have been secured for the one-day session. They are William T. Moss, M.D., Chicago, Director of Therapeutic Radiology, Chicago Wesley Memorial Hospital; Henry M. Lemon, M.D., Boston University School of Medicine, Boston; Lauren V. Ackerman, M.D., Barnes Hospital, St. Louis; and Cushman D. Haagensen, M.D., New York.

A complete program may be secured by writing to American Cancer Society, Oklahoma Division, 1401 North Robinson, Oklahoma City.

Book Reviews

THERAPEUTIC RADIOLOGY: William T. Moss, M.D., The C. V. Mosby Company, 1959, pp. 403, price $12.50.

This is an excellent presentation of the therapeutic approach to many of the problems that arise in therapeutic radiology. As the author states, this book is not a recipe for radiotherapy. However, the rationale and technique are very well discussed. The indications for and the limitations of conventional and supervoltage therapy are critically appraised.

The author discusses the response of normal tissue to irridiation at the beginning of each chapter dealing with therapy for cancer of individual organs.

No attempt is made in this text to cover the field of radioisotopes. However, the relative value of radioisotopes is mentioned when it is pertinent.

Prognosis and results are included in the discussion of therapy of the various lesions. The complications which may arise in patients with cancer are very well covered in this text and should be especially helpful to the physician interested in cancer therapy.

The book is written in a consise form, easily readable and should be a very worthy addition to the library of radiologists interested in therapy.—*Melvin C. Hicks, M.D.*

TEXTBOOK OF SURGERY, 3rd Edition: H. F. Moseley, Editor, The C. V. Mosby Co., St. Louis, 1959, price $17.00.

This volume is one of the better of the several textbooks of surgery. It is, in general, well written, with a reasonably complete and up-to-date bibliography following each chapter. Illustrations are excellent and as a result this volume has been a favorite with medical students for several years. No textbook can be up-to-date in the rapidly developing and expanding field of cardiopulmonary surgery, yet this section has been revised quite credibly at the date of writing. Like all textbooks of this nature, specific details on a specific problem are lacking and the supplementary bibliography must be used accordingly along with the more recent medical literature indices. The principles of surgery are well encompassed with a definite flavor of Canadian and British surgery. —*John A. Schilling, M.D.*

MISCELLANEOUS ADVERTISEMENTS

17 BED hospital, clinic and equipment for sale. Prefer to sell all to one buyer in attractive package offer, but will consider other offers. Equipment includes X-ray, fluoroscope, Medco Sonalator, BMR, diathermy, etc. In settling estate of Charles W. Ohl, M.D., facilities and equipment will be sold at considerably less than original cost, and time payments may be arranged. Contact Walt Allen, Co-Executor, 116 North 4th Street, Chickasha, Oklahoma.

WANTED: General Practitioner—Five man established group. Prefer locum tenens for one year. Will meet competitive salary requirements for qualified man. Contact H. B. Landholt, Business Manager, Physicians & Surgeons Clinic, Box 711, Holdenville, Oklahoma.

WANTED: Internist to join old established group in town of 10,000 population in West Texas. Need not be Board certified but with adequate residency training. Write Key A, THE JOURNAL, Oklahoma State Medical Association, P.O. Box 9696, Oklahoma City, Oklahoma.

WANTED: University Health Physician, man or woman. Salary depending upon experience. Approximately 9,500 students. Fifty bed hospital. Contact Roxie A. Weber, M.D., Director University Health Service, Oklahoma State University, Office of University Infirmary, Stillwater, Oklahoma.

PHYSICIAN NEEDED in Konawa, Oklahoma. Population 3,000 with no M.D. Building and some equipment available; also possibility that community will construct and equip modern clinic. Contact Robert D. Peercy, Box G, Konawa.

REGISTERED LABORATORY TECHNICIAN: Major oil company in progressive southwestern community of 25,000 has opening for female registered laboratory technician for complete clinical laboratory. 40-hour work week. Excellent employee benefits. Give education, experience, and salary requirements in initial letter and include photograph. Write Key F, THE JOURNAL, Oklahoma State Medical Association, P.O. Box 9696, Oklahoma City, Oklahoma.

FOR SALE: One 220 KV Westinghouse Deep Therapy X-ray Unit, complete with complete set of treatment cones, including intermediate therapy cone set and release treatment stretcher. Price: $5,000. Owner may be contacted via CE 2-5501 or P.O. Box 1825, Oklahoma City, Oklahoma.

WANTED: Surgeon to join old established group in town of 10,000 population in West Texas. Need not be Board certified but with adequate residency training. Write Key A, THE JOURNAL, Oklahoma State Medical Association, P.O. Box 9696, Oklahoma City, Oklahoma.

PHYSICIAN NEEDED in Weleetka, Oklahoma; a city with population of 1500 and trade territory of 3000; Clinic available; community will remodel building to suit physician and offer other cooperation in the establishment of a practice; New hospital being built within 10 minutes from clinic. Contact: Bob Carroll, Cashier, State National Bank; Phone Sunset 6-2311.

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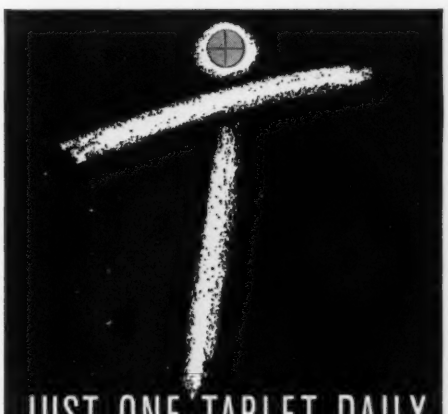

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